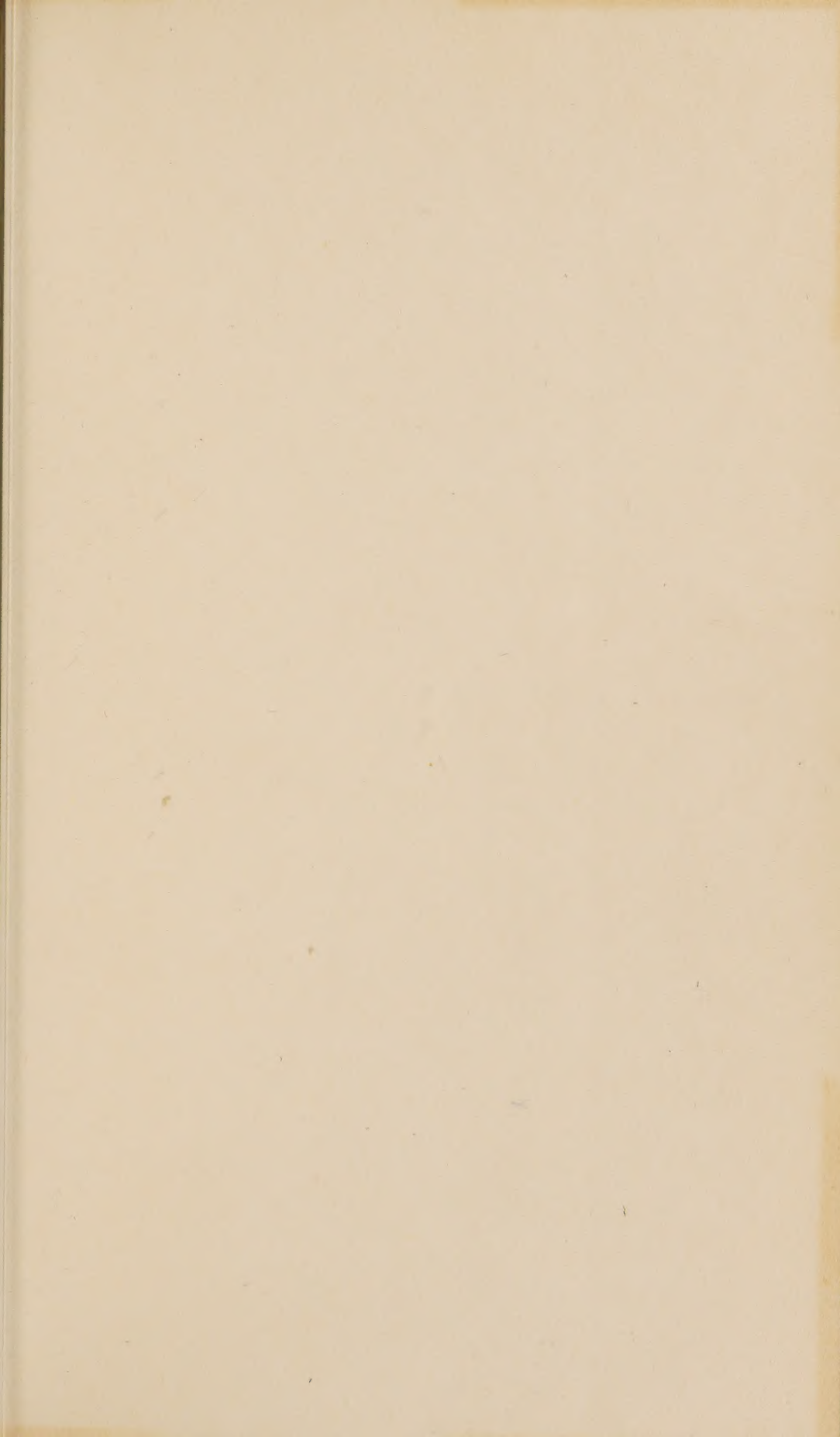


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COMMENTARIES

UPON

B O E R H A A V E's

A P H O R I S M S

CONCERNING THE

KNOWLEDGE and CURE of DISEASES.

BY

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Translated from the LATIN.

V O L. XIII.

EDINBURGH:

Printed for CHARLES ELLIOT, Parliament Square.

Sold by J. MURRAY, Fleet Street, London.

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C O N T E N T S
OF THE
THIRTEENTH VOLUME.

O F the Gout	- - - -	Page	1
Of the Diseases proper to Virgins	-		193
Of the Diseases of Women with Child	-		298

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COMMITTEE
OF THE
THIRTIETH VERMONT

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COMMENTARIES
UPON
BOERHAAVE'S
APHORISMS
CONCERNING THE
KNOWLEDGE and CURE of DISEASES.

The GOUT.

§. 1254. **T**HE gout is a very painful disorder, chiefly seated in and about the ligaments of the bones of the foot, and their articulations, renewing its attack most-ly in the spring and autumn.

Here the point in view is to determine on the most exact definition of this disorder, by which it may, with the greatest precision, be distinguished from all others; whence it becomes necessary to consider this disease as entirely simple, and altogether unconnected with any other kind of distemper whatever.

For although, as we shall see afterwards, it may seize on many other parts, and from thence acquire another appellation; yet the foot is the place on which it always makes the first attack (see §. 1259.)

Hence the origin of the name *Ποδάγρα χαλῶμαι γιγνομένη* *ποδὸν ἀγρᾶ*; *Podagra vocor, quasi pedum captura sim^a*;

“I am called the gout, making the feet, as it were, my prey.” We need be at no loss, therefore, about what name is to be applied to this disease, when-

VOL. XIII.

B

ever

^a Lucian Tragopod. Tom. III. p. 656.

ever it fixes on any other place; it is only joining that cruel epithet *agra*^b to the name of the part affected: thus, when the hands, for instance, are seized, it is called *chiragra*; when the knees, *gonagra*; and so forth. “For it takes hold of all these parts, the foot, knee, sockets of the joints, hips, thighs, hands, blade-bones, bones of the nose, arms and wrists, gnawing, wasting, burning, inflaming, and vexing them at the most painful rate^c.”

This baleful, this inauspicious term, the *gout*, is however, in a more peculiar manner, offensive to the generality of patients, who, for the first time, lie under the pangs of this disorder, well knowing how highly the brotherhood divert themselves at the expence of a new fellow-sufferer; and should they acknowledge the real name, *ab amicis omnibus in triumpho ducitur*^d, “it would be matter of triumph to all their acquaintance.” For this reason they would fain conceal the disease, and are ready to ascribe the pains they endure to any other cause than the true; nay, so far as sometimes to be in the utmost rage of displeasure with any physician who but ventures to drop the smallest hint concerning the real name of the distemper. The desire, in gouty patients, of disguising the real cause of their complaints, has been taken notice of by Aretæus^e. “Some pretend it is the wearing a new pair of shoes, others that it is by walking too much; one says it is a blow, another a sudden kick; but none will so much as mention the true secret and domestic source of this disorder: and even the patients themselves, when they are told the real truth, cannot by any means be brought to believe it.” Like instances of dissimulation, in gouty people, are also mentioned by Cœlius Aurelianus^f; till at length, *necessitate coacti, augmenti temporibus in confessionem veniunt agrotantes*; “by mere necessity, during the severity of the fits, they are brought to a confession.” It is seldom, however, that any, on the

^b Ibid. p. 671.

^c Ibid. p. 652.

^d Ibid. 655, et 665.

^e De Caus. et Sign. Morbor. Diurn. lib. ii. cap. 12. p. 66.

^f Morb. Chron. lib. v. cap. 2. p. 560.

the first attack, will allow of its being called the gout, until *hæc passio initio parvitatæ causa negligitur, et contempta convalescit*^g; “this disorder, in the beginning being only slight, and therefore not much minded, acquires from this very neglect new degrees of strength and vigour.”

But as the term *arthritis*, arthritic pains, is in general less displeasing; most sick people, even physicians too, conceal the gout under this appellation, till the return of a regular fit puts it beyond all manner of uncertainty. This, in reality, is the more excusable, as physicians of the first eminence have, in the same manner, ranked the *gout* as a species under the general term *arthritis*. Thus Fernelius^h says, “The different species of arthritis are reckoned as many as there are different joints: custom, however has given names only to three; which are, *chiragra*, *ischias*, and *podagra*: but pain of any kind lodged in any other joint, is classed under the general denomination *arthritic*.”

In the mean time, we know for certain, that, among the gouty class, especially those who have undergone several fits, when the disorder is got up into the knee, it never, even then, has been termed *arthritis*, but always *gonagra*. The ancients besides have evidently distinguished this distemper from all other disorders of the joints. Thus Hippocrates, speaking of these same disorders, says, *But as to those who have pains and swellings about the joints, that go off in a way different from the gout; in them you will observe the bowels enlarged, a white sediment in their urine; on raising the head, they will complain of frequent pains; they complain too of nocturnal sweats: but if there appear no such sediment in the urine, nor any nocturnal sweats come on, there is reason to expect either a lameness of the joints, or the appearance of a tumour called meliceris immediately under them*ⁱ. As a further proof of this,

B 2

we

^g Ibid.^h Patholog. lib. vi. cap. 18. Tom. II. p. 22.

ⁱ At quibus circa articulos dolores sunt et tumores, et sedantur non podagrico modo, in his comperies viscera magna, et in urina subsiditiam albam; et talis, si tempora elevarit, dicet se sæpe dolere, dicet etiam.

we find the *arthritis* afflicting several, nay, sometimes all the joints of the body universally, but seldom or never the feet alone; whence Aretæus^k seems to hold “the *arthritis* to be the common suffering of all the joints, and the *podagra* that of the feet alone.” Æginæta^l gives us the same diagnosis, calling it *arthritic* when the disorder invades all the joints of the body.

Notwithstanding therefore the gout is sometimes confounded with the *arthritis*, yet it is plain they are distinct diseases: for although the gout, when inveterate, may seize on several other joints at one and the same time; yet, in the first stage of this disorder, it never fails to attack the feet alone^m. Besides, the *arthritis* usually begins with a fever. “The gout, on the other hand, quickly takes possession of the joints without any previous sign or warningⁿ.” And notwithstanding belchings, crudities, and other marks enumerated §. 1257, do precede the returns of the fit, yet the first attack always comes on without any previous sign whatever; insomuch that I have known persons go to bed well, and wake in the middle of the night with exquisite pain.

Nay, I myself, not long ago, saw a gentleman, in the flower of his age, of a robust constitution, stepping out of a chariot, all at once struck with such extreme pain in his great toe, that he firmly concluded it to be either violently sprained, or put out of joint. But the event at last proved it to be a gout: for, in a few days, the pain went off by degrees, leaving not the smallest trace behind; and, in about a year after, returned. We know, too, the first attacks of the gout are never lasting. In this they differ from arthritic pains, which are of a long duration, insomuch that, if they begin their attack in autumn, they are hardly ever over before the spring. Neither is it customary for

etiam sudores sibi nocturnos oriri: si vero neque in urina subsidet talis subsilentia, neque sudores sunt, periculum est ne aut claudi fiant articuli, vel quod melicerida vocant sub ipsis nascatur. *Predict. lib. ii. cap. 91. Charter. Tom. VIII. p. 827.*

^k De Caus. et Sign. Morb. Diuturn. lib. ii. cap. 12. p. 65.

^l Lib. iii. cap. 78. p. 57.

^m Luc. Tom. III. p. 666.

ⁿ Ibid. p. 665.

for them to have any regular return; for many I have seen who have suffered exceedingly from this disease, who have yet, during the remainder of their life, continued entirely free. Whence this remark of Aretæus^o: “ We very seldom find indeed a fit of the
 “ gout which continues a very long time, though we
 “ see very long intermissions sometimes happen be-
 “ tween each fit. A person, during the Olympic
 “ games, hath been seized with a gentle fit of this
 “ distemper; yet going off soon, the same person
 “ hath run and gained the victory.” If therefore an unexpected pain, without any other manifest cause, seizing the extreme parts of the foot, shall in a few days vanish by degrees, of itself, or by the use of gentle remedies, leaving not the least mark behind, we may then reasonably suspect it to be the gout; and still more so if the causes hereafter to be mentioned precede it: but it is confirmed, beyond all doubt, if the disorder return either in the spring or autumn, as Hippocrates remarks^p; *Gouty complaints are, for the most part, set in motion in spring and autumn.* Here we must take special notice, that Hippocrates does not say the disease is produced; but seems to point out how the morbid matter, secretly and by degrees accumulated, is stirred up, and disposed to wreck all its force on the joints. Galen, in his commentary on this^q place, remarks, that the spring is the season in which the return of the gout is principally to be dreaded; which is confirmed by Lucian^r, who has so well described this disease.

*Sed quando ulmi vere tener flos abundat,
 Et arguta cantat in ramis merula;
 Tunc per membra acutum telum hæret mystis,
 Obscurum, latens, subiens recessus artuum.*

But when the flow'ry elms declare the spring,
 And the shrill blackbirds on the branches sing,

B 3.

Then

^o De Caus. et Sign. Morbor. Diuturn. lib. ii. cap. 12. p. 67.

^p Podagrici affectus vere et autumnno plerumque moventur. *Sect. vi. Aphor. 55 Charter. Tom. IX. p. 287.*

^q *Sect. vi. Aphor. 55. Charter. Tom. IX. p. 287.*

^r *Tom. III. p. 641, 651, 652.*

Then thro' our limbs her pointed arrow glides,
 Ent'ring unseen, and in the joints resides.

§. 1255. **T**HE gout, always uniform, from whatever cause produced, when left to its own natural and regular course, generally afflicts people of riper years, thirty and upwards, and of the male sex: men of acute and deep understanding, who exercise it too much, and protract their studies till late in the night: those who live luxuriously, and spend the night in drinking great quantities of sharp acid white wines, or strong spirituous liquids; who have used venery too early, and to an excess; who are of a large, gross, and plethoric habit; who use acids immoderately; who cool their sweaty feet too suddenly, or sweat too long in wet stockings or shoes, whence those who hunt or ride much in cold weather are in danger of the gout; who have it transmitted by inheritance from a parent, who sometimes escapes himself, yet it appears at length in his offspring; and lastly, those who have it by contagion.

It will appear hereafter, that there is something imperceptibly accumulated in the body, which, derived afterwards to the feet, produces the paroxysms of the gout: for though this disease may owe its rise to very different causes, yet the course it takes, when produced, is similar in every respect; whether handed down by a hereditary family taint, or sprung from errors committed in the general way of living. This is however only to be understood when the disease has not been disturbed in its natural course by improper remedies, or any other cause: For if the gouty matter be not deposited in the proper place, or, if deposited, it is by any means repelled; then indeed there arise symptoms altogether irregular and uncommon, which
 how-

however vanish again as soon as the feet begin to be severely pained.

People of riper years, &c.] Hippocrates^s held, that boys before the exercise of venery was not liable to the gout; and elsewhere^t numbers the gout among the diseases that do not appear before the age of puberty: which is confirmed too by Galen^u, in his commentary upon this aphorism, who says he had seen eunuchs indeed taken with this disorder, but never any boys; and if any time somewhat like it has happened to children, such as swellings in the joints of the knees and hands, it seemed rather to be a species of the arthritis, *propter plethoram ex multis cruditatibus acervatam*, “occasioned by a plethora arising from
“ a number of crudities.” For it appears, that the arthritis, as well as the rheumatism, has often been described under the name of *podagra*. Hence in Athænaeus^w we read the following account. “Pythermus
“ hath recorded, as we have it from Egefander, that
“ in his time the mulberry trees bore no fruit for
“ twenty years together; and that the gout became
“ so generally epidemical, as not only to afflict grown
“ men, but likewise boys, eunuchs, married women,
“ and young virgins, all suffered from this disease.
“ It raged too even among the cattle, in so violent a
“ manner, that the best part of all the sheep were seized with this same distemper.” Now, as the mulberry, “of all the trees, comes forth the latest, and
“ never till the cold weather is gone, and therefore
“ called the wisest of trees^x,” it is but reasonable to conclude, that the unusual degree of cold, at that time, was such as might greatly favour the production of the rheumatism and arthritic disorders: for I do not know, from any well-attested instance, that a true genuine gout ever afflicted the human race after the manner of an epidemical disease.

Sydenham^y, in like manner, assures us from his own observation, that he had never seen either children

^s Aphor. 30. Sect. vi. Charter. Tom. IX. p. 264. ^t Coac. Prænot. n^o 512. Charter. Tom. VIII. p. 882. ^u Charter. Tom. IX. p. 264.

^w Athæn. Dapnosoph. lib. ii. p. 26. ^x Plin. Second. Hist. Nat. lib. xvi. cap. 25. p. 390. ^y Tractat. de Podagr. p. 556.

dren or striplings affected with a true and genuine gout: some indeed he saw, ("whose fathers, at the " time of begetting them, were confined by this disorder,") that felt a gentle irritation, as it were foreboding it, before they reached the age of maturity. Aretæus² too held the same opinion, with regard to this disease being peculiar to the riper years of manhood, when he says, "For the a geliable to this distemper is " from five and thirty and upwards, sooner or later, " according to the difference of constitution and manner of living."

The male sex.] However certain it is that women are less subject to this disease than men, yet they by no means escape altogether free. Hippocrates has said, *That a woman is not liable to the gout, unless she is deficient in her menstrual discharges*^a. But we know, from undoubted experience, that several of the fair sex have been attacked by this disease, notwithstanding they had these discharges in great abundance and regularity: but this, indeed, is more frequently the case with those in whose family it has been hereditary, than with others who have it from a different cause. Seneca^b, glancing on the degeneracy of manners in his days, says, "The nature of women is not altered, " but their manner of living; for while they come " up with the men in every kind of licentiousness, " they equal them too in their very bodily disorders." And a little after he thus excuses Hippocrates, "Why " need we then be surpris'd at seeing so many of the " female sex afflicted with the gout, and also with " baldness, contrary to the maxims of Hippocrates, " the greatest of physicians, and the best acquainted " with nature? seeing they have by their vices thrown " away the natural advantage of their own sex, and " by putting off the woman are doomed to suffer all " the diseases peculiar to the other." Hence Aretæus seems to express it very well, where he says, "Men, " and the more active among women, are chiefly lia-

" ble

² De Caus. et Sign. Morbor. Diuturn. lib. ii. cap. 12. p. 67.

^a Mulier podagra non laborat, nisi ipsi menstrua defecerint. *Secl. vi. Aphor. 29. Charter. Tom. IX. p. 265.*

^b Epist. 95. p. 600.

“ ble to this disorder; but women, though not so often afflicted, yet do suffer more severely; for the distemper in itself is naturally violent, and being neither customary, nor familiar to them, must on that account acquire an additional force, and consequently occasion a greater degree of sufferance^c.”

The observation too of Sydenham^d confirms this opinion: for he says, that he very seldom knew it attack women; and then “ only the aged, or such as were of a masculine habit of body; for lean and emaciated women, who, in their youth or riper age, are seized with symptoms not unlike the gout, receive them from hysteric disorders, or some preceding rheumatism, the morbid matter whereof was not sufficiently carried off in the beginning.”

In the mean time it is necessary to remark, that tho’ Seneca asserts it to be the opinion of Hippocrates, that women are subject neither to the gout nor to baldness; yet in the aphorism cited, there is not any mention made of baldness: but in that^e which immediately goes before it, he says, “ Eunuchs are neither troubled with the gout, nor grow bald;” which very aphorism was afterwards warmly opposed by a number of physicians, inveterate enemies to the ancients, who flourished particularly in the days when, immediately after Paracelsus and Helmont, the chemists had got possession of the schools of physic.

Heinsius^f in like manner, in his Apocryphal Oracles of Hippocrates, for so he terms the aphorisms of that great man, triumphs in a very petulant and outrageous manner, because he himself had seen some of the young of both sexes that laboured under this disorder from an hereditary taint, and knew two eunuchs in particular who were miserably afflicted by it.

At the time when Hippocrates lived, it does not appear to have been customary with the Grecians to admit eunuchs among their slaves: but a considerable part of Greece being under the dominion of the Persian

^c Loco ante citato.
Tom. IX. p. 264.
P. 23, 38.

^d Swan’s edition, p. 471.

^e Charter.
^f Naawkeurige Verhandeling van het podagra,

sian empire, the satrapæ or governors kept among their slaves a great number of eunuchs; Hippocrates had no doubt a good opportunity of examining their habit of body, manner of living, and particular diseases; more especially as he not only visited a great many foreign parts himself, but also had a correspondence with a great number of his scholars, who, going out to all quarters of the world, sent him generally a faithful account of every thing curious that came under their observation. Now, all the time of Hippocrates, and for a great while after, the Persians, by the most exact and rigorous laws, preserved a frugal and temperate manner of life, and the strictest discipline in the education of their youth, there being no one whatsoever allowed to indulge in idleness; not even the children of their princes being exempted, by way of privilege, beyond those of every other individual: seeing therefore the eunuchs were incapable of venery, and by the very practice of the country obliged to a temperate life, besides being for the most part employed as guards over the apartments of the women; it is plain, they could not be at all subject to many of the principal causes, which, for the most part, produce the gout. See a learned dissertation^g, wrote on aphor. 28. §. 6. well worthy of perusal, where every thing relative to this head is treated at full length, and Hippocrates well defended against all his calumniators.

What we have said above, is yet farther confirmed by Galen, in his commentary on this aphorism, where he says, *That eunuchs, indeed, in Hippocrates's days, were never subject to the gout, was very certain; but in these present times it was no more so, owing entirely to too much indulgence in an idle as well as intemperate manner of living^h. A little afterwards he addsⁱ, For notwithstanding their being secluded from the use of venery, yet their sloth, their gluttony and cramming,*
were

^g A. Barthol. Hermann. de Moor. Lugdun. Batav. 1736.

^h Cæterum eunuchos podagra non laborare, Hippocratis quidem tempore, verum erat; nunc vero non amplius, tum propter nimium otium, tum simul victus intemperantiam. *Charter. Tom. IX. p. 264.*

ⁱ Talis enim est eorum desidia, tanta ingluvies et crapula, ut etiam absque veneris usu corripi possint podagra. *L. ii. c.*

were such as to be sufficient in themselves, without any other cause, to bring on the gout.

Men of deep thought, &c.] Celsus saysⁱ, that the cure of diseases must have been coeval with the contemplation of nature, or philosophy; because those in a particular manner require the assistance of medicine, “ who by intense thinking and want of natural rest “ impair their bodily strength.” Many there are, without doubt, that lead a chaste and sober life, having no reason to suspect a hereditary taint, who yet are miserably afflicted by this distemper: they grow pale amid their books, and, though often pressed by their physicians, will not take the due exercise necessary to recruit that waste occasioned by too intemperate an application to study; “ for the disease steals imper- “ ceptibly upon those addicted to long meditation^k.” Besides, during a constant, continued stretch of thought, the finer parts of our fluids are drawn off, and what remains rendered more sluggish (see §. 1093.) The studious, therefore, by giving their bodies no exercise or motion, greatly hinder the digestion of their aliment; and this indigestion may, with good reason, be looked upon as the more immediate cause of this distemper, as we shall see more particularly when we come to §. 1265.

Sydenham^l, who for many years laboured under this disease, considered it as a matter of consolation to himself, and which might be so “ to other gouty persons “ of small fortunes and slender abilities, That kings, “ princes, generals, admirals, philosophers, and several other great men, have thus lived and died. In “ short, it may, in a more especial manner, be affirmed of this disease, that it destroys more rich than “ poor persons, and more wise men than fools; which “ seems to demonstrate the justice and strict impartiality of Providence, who abundantly supplies those “ that want some of the conveniencies of life, with other advantages, and tempers its profusion to others “ with equal mixtures of evil.” The Laplanders, who,
living

ⁱ In Præfat. p. 2.

^k Aret. Cappadoc. de Caus. et Sign. Morb.

Diuturn. lib. ii. cap. 12. p. 65.

^l Swan's edition, p. 470, 471.

living contented with the simplest fare, employ their understandings the least of any, *talem morbum in mundo existerē ne per somnium audiverunt*^m, but continue active and agile through the whole of life. Linnæus, when much fatigued with his passage over the Alps, was astonished to see how little inconvenience two old Laplanders who accompanied him in his journey, and carried part of his baggage, felt from the ruggedness of the paths; nay, he has seen old men, above seventy years of age, put their heels on their neck, as boys used to do, without the least trouble or inconvenience.

All nocturnal lucubration and study are particularly hurtful to constitutions inclining to this disease, inso-much that I have seen patients, who, having been long afflicted, found their complaints considerably increase by perusing even letters of their friends at too late an hour.

Who eat luxuriously.] Hence the gout is called “the disease of the wealthy;” and *μισοπτωχοῦ δεῖα*, or “poor-despising goddess,” that sits enshrined at the feet of the rich. In this particular cause of the disorder all authors are agreed. Sydenhamⁿ, who was at the greatest pains to investigate it, says, “The gout generally attacks those aged persons who have spent most part of their lives in ease, voluptuousness, high-living, and too free an use of wine and other spirituous liquors, and at length, by reason of the common inability to motion in old age, entirely left off those exercises which young persons commonly use.” For as long as the body remains agile, and can bear the strongest exercises, it is then able to get the better of large quantities of food, and to digest it properly; but when the body begins either to grow fat and unwieldy, or to languish under the weight of years, the persons at the same time indulging their appetites as usual, they must very soon expect a visit from this distemper.

What confirms the truth of this observation is, that persons, by some accident or other obliged to live more abstemiously, have been entirely cured of this distemper

^m Lin. flor. Lapon. p. 157.

ⁿ Swan's edition, p. 463.

distemper, when the cause was owing to rich and high living. "We read of some people, that had been much afflicted with arthritic and gouty disorders, who, upon the forfeiture of their goods, and being reduced to a spare diet and simple manner of living, were recovered to perfect health: for then they were disengaged from the anxieties that attend the management of a large house and servants, and from the surfeiting plenty of a luxurious table, both equally injurious to the health of the mind as well as to that of the body^o." Many more instances of the like kind are to be found in Skenkious^p. There is a story I myself have heard from several persons of undoubted credit, of a certain priest, who enjoyed a rich living, and had been an old constant sufferer in the gout; but happening at last to be taken by the pirates of Barbary, was detained there for the space of two years a slave, and kept constantly at work in their galleys: which had this good effect, that afterwards, when he was ransomed from captivity, having lost all his troublesome and monstrous fatness, he never once had a fit, though he lived several years after the event.

Sharp acid white wines, &c.] Helmont^q thought that the principal cause of gouty pains was owing to an acrimonious acid that vitiated the synovia, or unctuous liquor which lubricates the inside of the joints, rendering it thick and grumous, and of consequence unfit for its purpose. "So that all the healthier part of the synovia exhales, and leaves its place filled up with a dead unactive matter: hence springs that unnatural morbid offspring, which is again the parent of these obstinate swellings called nodes; for, by carrying off in exhalation the fine liquid parts, and retaining the opaque indurated particles of the synovia, it is thus productive of stony concretions, chalk-stones, and other such terrible consequences."

For this reason he condemns the drinking largely of

VOL. XI.

C

white,

^o S. Hieron. Advers. Jovin. lib. ii. p. 341.

^p Observat. Medic.

lib. ii. p. 681.

^q In Capitulo, "Volup. viventium morbus acut. quit. putatus," p. 315.

white, sourish wines, which partake more of the nature of vinegar than of wine. Such wines, we find, were termed *εἰνα ὀλιγοφορα*, or weak wines by the ancients. *Oligophorum* is, of all wines, indeed the most watery, and which can bear the least quantity of water to dilute it: it is therefore very weak indeed; for wine is the more intoxicating, and of firmer body, in proportion to the quantity of water it can bear. Hippocrates calls this a wine only vinous; but we must however be cautious in prescribing such wine, as being prejudicial to persons of a weakly habit: it is much safer to give watery wine, provided it is rough and austere to the taste, because it neither has the weakening quality of water, nor yet the hurtful ones of stronger-bodied wines^r. These weak wines therefore do not appear to be so prejudicial in their own nature; but are only too often drank in large quantities, being of a grateful taste, and more especially pleasing in the heat of summer to those who are thirsty.

But whether this acid, according to the doctrine of Helmont, be really the cause of gouty pains, is by no means yet determined among physicians. For both the fluids and solids, when examined chemically, exhibit no proof of an acid, but a volatile alkaline salt; and even the gouty concretion itself dissolves entirely in acid liquors; or, when distilled in a retort, yields a volatile alkaline spirit^s: not to mention the benefit gouty people have received from the use of sour milk, as we shall afterwards see more at large. But yet (since acrimony of the fluids is generally classed among the causes of the gout, §. 1263.) an acid acrimony may very much contribute to produce this disease; and this more especially when sour wines are constantly drank, and in large quantities; for then indeed,

^r Est autem oligophorum, quod, si diluatur, minimam sustinet aquæ mixtionem; sed est sane imbecillimum; et, ut in vinis, aquosissimum; nam quod plurimum aquæ in mistura, id tum vehementissimum est, tum validissimum. Ejusmodi vinum Hippocrates vinosum nominat. Verum ab hoc cavendum est, quoniam imbecillas vires ferit. At quod aquosum natura est, cæterum austereum, id percommodum est, quod et ab aquæ imbecillitate recessit, et vini noxam nondum habet. *Galen. Method. Medend. lib. vii. cap. 6. Charter. Tom. X. p. 163.*

^s Philosoph. Transact. n^o 403. p. 491. Abridg. Vol. VII. p. 645.

indeed, in course of time, the blood may be vitiated with an acid acrimony, as we have already shewn in the chapter concerning spontaneous diseases from an Acid Humour.

There is in the Medical Observations^t, a surprising case which proves the existence of this acrimonious acid in the gout. A person, during a fit of this disease, was almost distracted through the violence of the pain: when a moment it deserted his feet, and seized upon the calves of his legs with the same fury. In half a minute after, his legs and feet were easy, and he felt it in his thighs: then leaving his thighs, in the same space of time it ascended to the abdomen, and gave him most excruciating gripes in his intestines: at length, getting up to his stomach, it made him throw up a thin, greenish, sour kind of a liquor, so sharp as to equal the strongest mineral acids in acrimony. This patient, being a practitioner of surgery and pharmacy, was, on that account, no improper judge of these extraordinary circumstances. After he had thrown up, then, about three half pints of this acrid liquor, he was immediately eased of all his complaints; slept five hours; and, bating a little swelling and tenderness in the feet, nothing of the disease remained; so that in two days time he was able to go about his ordinary business. A like paroxysm returning in a year after, he was, in consequence of throwing up the like acrid liquor, relieved in a similar manner, so as to be able next day to walk abroad. In ten months after, all the same symptoms returned: but the quantity of acrid liquor which he brought up was so exceedingly lessened, as hardly to equal the eighth part of an ounce. He tried, indeed, to provoke the vomiting, by drinking three pints of warm water, and irritating the gullet with his finger; but all would not do: yet what he did throw up, gave him immediate relief.

This sudden ease from so furious an attack of the gout, after nature alone, without any assistance from art, had expelled this sharp acid liquor, seems mightily to favour the doctrine which holds an acrimonious

acid to be one of the productive causes of this disease.

There are other physicians of the highest reputation, who seem not averse to favour this same opinion. Thus Hoffman, treating of this disease, thought, that notwithstanding "a pure acid was seldom found alone" and unmixed in the bodies of animals"; yet that a tartareous acid may sometimes, though not always, be the cause of this disorder: nay, he afterwards adds from the experiments of Clopton Havers, "It is very remarkable, that nothing destroys and coagulates the mucilage of the joints more than an acid salt of tartar; for example, the weaker vinegars, or the reddish white-wines: nor can you produce so great a change, or so strong a coagulation, even by the powerful acids, such as oil of vitriol, &c." And from thence he concludes, that wines which abound with tartar are by far the most liable to occasion arthritic disorders.

What we have farther to observe concerning this matter, we purposely refer till we come to consider the nature of stony concretions and gouty chalk-stones.

Strong, spirituous liquors, &c.] How much the body is changed by the frequent and immoderate use of strong liquors, has been already shewn, (§. 605, n^o 11.) There is nothing however more hurtful than protracting jolly drinking-bouts to midnight, as the sons of Bacchus seldom fail to do; for next day, when they have slept out their drink, what follows, but languor, loss of appetite, and immoderate thirst? But when once the indulgence becomes habitual, there is not an office of life they can perform till they have raised their languishing spirits with a stimulating glass. By this means the action of the stomach and viscera is almost wholly destroyed, or, at best, rendered languid and feeble; hence those continual indigestions to which the origin of the gout is so justly attributed, (§. 1265.) Those who drink hard have a ready excuse for this cause, by pointing out people who, notwithstanding they live soberly and abstemiously, are yet afflicted.

^u Medic. Rational. et Systemat. Tom. IV. parte ii. p. 506. et seq.

afflicted with this distemper: True; but then the gout may have its origin from many other different causes. We know it is equally certain too, that drinking and eating to excess, as oft as any other, give rise to this disorder.

I know indeed, that a celebrated physician at Paris^w, a few years since, published a treatise, wherein he considers a mucilaginous degeneration of the humours as the most essential cause of the gout; and says, that this again arises, either from too strong and viscid aliment, or from the daily use of such liquors as have in their composition a great deal of that kind of matter: therefore he judged wines, that contained a larger share of acid salt and spirit, to be the best preservative against this distemper, as having the power of attenuating this viscosity; on the other hand, that all kinds of liquors, which contained more of a clammy matter, greatly favoured it; whence he concluded, that drinkers of beer were, for this very reason, of all others, the most liable to be seized with the gout. Although many arguments may be brought against this opinion, it will be only necessary, I believe, to mention one. Formerly, when a frugal manner of living was more in use among the Dutch, beer was the only drink; not only a smaller kind, which they used at meals, and when they were thirsty; but a strong hearty sort, with which they loved to regale themselves in the evening, after the fatigues of the day. Wine rarely or never was used, even by those who could very well afford it: and yet the gout hardly ever afflicted any that lived in this manner. On the contrary, I have observed a far greater number under the power of this distemper, since the drinking plentifully of wine came more in fashion, the genteeler people having laid aside the use of strong beer almost entirely, leaving it to be drunk by the lower sort alone, whilst they themselves most liberally indulge in wine, especially at night, when, business being over, they give themselves up, without restraint, to the enjoyment of their friends and glass. The celebrated Linnæus^x, seeing that tho'

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^w Leger *Traite de la Goute*, p. 75, 96, &c.

^x Flor. Japonic.

the Laplanders frequently drink malt spirits, and that often in too great quantities, yet they never so much as dream of the gout; and having observed that many country people in Sweden, whose ordinary drink is malt liquor, and who taste no wine, yet never had the least touch of the distemper; therefore asks, “Does not the gout proceed solely from the use of wine?” “nations that are most addicted to this distemper, and whose common drink is wine, &c. seem to confirm it; so do our own people of fortune, who indulge plentifully in wine of all sorts.” Besides, it has been already observed on another occasion, (§. 1211.) that wheat flour, washed in water, lets fall a thick glewý matter, which will by no means mix with the water, and, when examined chemically, appears to yield what in all respects is like to that procured from the parts of animals. This viscid matter then, in the blood of gouty persons, so much blamed as the material cause of their distemper, one is apt to think, would largely abound in this kind of grain, which makes so great a part of our common food. Even milk itself, which frequently is of so much benefit to gouty people, has in it all the viscidness of its cheesy matter.

Too early and too excessive use of venery.] It seems to have been a commonly-received opinion among the ancients, that either an excessive, or too early an indulgence in venery, was very apt to give rise to the gout. Aëlius, in recounting its general causes, says, “What greatly produces a tendency to this disorder, are, Abounding crudities, frequent drunkenness, and, above all, an immoderate use of venery.” Nay, the very reason why Hippocrates has said that eunuchs, and boys below the age of puberty, are never known to have this disease, appears to be, that they are incapable of that enjoyment. Sydenham² says, that the distemper generally invades old people, though he has seen it sometimes attack the younger sort, “when either they had the unhappiness to receive the seeds of it from gouty parents; or, if this was not the case,

¹ Sermon, 12. cap. 6. p. 308.

² De podagra.

“case, had given up themselves too early to venereal pleasures.”

Elsewhere too he condemns venery as pernicious to people in years, as well as to those afflicted with the gout. More of this may be seen by turning back to §. 586, n^o 5. where, treating of the bad effects of excessive venery, we mentioned from Sanctorius, that the powers of concoction are exceedingly weakened by too frequent copulation; whence it is classed as one of the causes of this distemper, (§. 1265.) Many I have myself seen, who, having scarcely attained the age of puberty, had begun to waste their strength in venereal enjoyment, and, before the age of thirty, became so miserably gouty, as to lose almost all use of their hands and feet, notwithstanding they were born of sound parents, and in all other respects had been extremely regular.

It seems therefore somewhat hard totally to exclude the abuse of venery out of the causes that produce the gout, as a celebrated author has done^b; when, rejecting all others, he maintains this thick viscid matter to be the only cause of that distemper. It is true, indeed, that several distinct causes may concur in giving birth to this disease; and it seldom happens, that those who indulge in venery do not likewise indulge in wine: hence the gout is, by the poets, saluted daughter of Bacchus and Venus.

Λυσιμελὲς Βαχχὺν καὶ λυσιμελὲς Ἀφροδίτην
Γεννᾶται θυγατὴρ λυσιμελὲς Ποδαγρᾶ.

From member-dissolving Bacchus, and member-dissolving Venus, was produced a daughter, the member-dissolving Gout.

In the mean time, any one of these seems of itself sufficient to produce the gouty. The gouty people in Italy blame an excess of venery; in other regions, they accuse gluttony and surfeit; and many times we hear several complain of their bodies being enervated and wasted by both.

A large, gross, and plethoric habit.] Such is the habit of body peculiar to those who are accustomed to high

^b Leger Traite de la Goutte, p. 46, 88.

high feeding, and love to drink hard; more especially if, at the same time, they take but little bodily exercise: for, as long indeed as by riding, hunting, or any other method, they keep their bodies in proper motion, so long they enjoy a sufficient share of health: but when, growing in years, their strength and agility are much impaired, they still continuing their ordinary course of excess, then it is that we often see them attacked by this distemper^c. Whence Cœlius Aurelianus^d classes among the causes of the gout, *repentinam desertionem solita exercitationis*, “the relinquishing an “accustomary exercise too suddenly.” But Sydenham judiciously remarks, that a full habit is not peculiar to every gouty patient; for sometimes lean people, though not so often indeed, are attacked by this disorder; those, in particular, who have brought on the distemper by excessive venereal indulgence, are, for the most part, very lean, and much emaciated; nay, sometimes, when the fits are exquisitely severe and lasting, through mere torment they become at last reduced almost to skeletons.

Immoderate use of acids.] What are the ill effects to be feared from the use of sharp sourish wines, has been already mentioned a little above. Boerhaave used to relate to his pupils, on this occasion, an instance of a physician, who, being thoroughly addicted to the opinions of Helmont, took every day a large dose of *spt. sulphuris per campan.* hoping, by this remedy, to lengthen his life to a distant period, and preserve it always free from every sort of contagion; and who at last, taking the gout, was cured by the continued use of volatile alkaline salts.

Cool their sweaty feet too suddenly.] We shall see afterwards, that besides the vitious state of the liquids, a rigidity and straitness of the vessels are also to be blamed as a cause of this disorder; and this is the chief reason why people of the lower class are sometimes seized with it, even though their poverty is over and above sufficient to keep them sober, and their situation

^c De podagra, p. 545.
p. 558.

^d Morb. Chronic. lib. v. cap. 2.

tuation of life obliges them, in earning their sustenance, to a great deal of bodily exercise. Such as get their living in Holland by digging of turf, are often obliged to stand the whole day with their feet under water: it is the same with fishermen: and though they wear boots, yet, these being insufficient to keep out the wet, it is their custom many times to dry them by sitting near the fire; whence the solid parts becomes rigid, and even the boots, unless immediately done over with oil, are rendered for ever useless. Hunters too, who, regardless of every kind of weather, are sometimes obliged, in pursuit of their sport, to remain long in marshy places, with their feet immersed in mud and water, bring on that same noxious disposition, and, by rendering the ligaments and tendons stiff and rigid, fall often a prey to this distemper; but most of all so, when any one or more of the causes above mentioned concur to produce a thickness or acrimony in the fluids.

By inheritance, &c.] That the gout is hereditary, all physicians are pretty unanimously agreed; and I have seen, myself, many that had no reason to blame any cause whatever besides an hereditary taint, and always lived according to the greatest chastity and sobriety, who yet had been attacked by this disorder even early in their youth. Among these I was acquainted with a very wise, judicious man, who, knowing the distemper to be hereditary in his family for many generations, chose to live unmarried, rather than to hand down to posterity so baleful a distemper. Helmont^c; in speaking of this hereditary gout, says, “There is therefore a peculiar disposition or character of the gout residing in the seed, like an embryo of the disease, which, as a swallow in the time of winter, lies quiet, and, as it were, asleep, till awakened by the first paroxysm. The forming quality therefore finds no hindrance in the seed from any material indisposition, since this original character or disposition must have time to ripen before it takes on the form of the distemper; and for this
“reason,

^c In capitulo, “Volup. vivent. morbus,” no viii. p. 313.

“ reason, it may be even the third generation before
 “ it displays itself fully.” A skilful physician once
 who knew that the gout was hereditary in his family
 always from his early years apprehended an attack
 from this latent enemy. Nor was he deceived: for
 he fell at last under its power^f; but shewed at the
 same time, by his own example, that the cure of this
 disease, even when hereditary, is not always to be
 despaired of. See what is said, §. 1075, n^o 1. con-
 cerning hereditary disorders.

By contagion.] Observations of what happens in
 diseases seem to prove clearly, that many disorders
 which owe their rise to very manifest causes, may
 change the human body, and all its humours, as that
 a person, under such a state of the disorder, may, by
 contagion, impart it to others, though he himself first
 received it from causes extremely obvious and mani-
 fest; insomuch that healthy persons shall easily be in-
 fected, notwithstanding they have never been subject
 to those manifest causes that first produced it in him.
 Thus a dysentery, arising from a plain obvious cause,
 comes afterwards to be propagated by infection. And
 it has been already observed, (§. 1133, 1134.) that se-
 veral animals that run mad though not originally in-
 fected, yet communicate their madness by contagion
 to other animals with the utmost facility. Many other
 particulars concerning this matter we shall have occa-
 sion to mention when we come to speak of the vario-
 lous infection, (§. 1381.). In the mean time it ap-
 pears pretty plain, from what has already been said,
 that a disease, not originally received by infection, may
 produce such a contagious disposition in the body, as
 may afterwards be able to communicate that very dis-
 ease by infection to another. From analogy there-
 fore we may easily conceive, how something of this
 nature may happen in the gout, especially as there are
 several observations which appear to confirm it. “ A
 “ dog was accustomed to lie at a person’s feet, who
 “ laboured under a severe fit of the gout: this person,
 “ who a little before through mere torment wished
 “ for

“ for nothing more than death itself, when he had
 “ got out of the fit was highly diverted to see the dog
 “ running round and round, giving all the signs, by
 “ barking and howling, of the pain which he had
 “ caught of his master^g.” John Bapt. Warlofchnigg^h
 hath told us, that he knew two people, one of whom
 had a pair of boots, belonging to a gouty person, given
 to him in a present; the other bought a pair of the
 same kind at a broker’s shop. Both these men, after
 wearing the boots a little time, were seized with the
 most excruciating gouty pains. *Helmont*ⁱ gives an ac-
 count of a noble lady, whom he knew, that, during
 the remission of her gouty pains, whenever she sat in
 a chair in which her brother, afflicted with the same
 disorder, had formerly, and in another city, always
 been accustomed to sit, she found immediately her
 pains return upon her violently; and though she suf-
 fered these pains for several months without remission,
 yet nobody had the least suspicion that it arose from
 the chair. He adds however, that another gouty per-
 son used to sit in it without feeling any such bad ef-
 fects. Whence he concluded, “ that a thickened per-
 “ spirable matter from her brother, lodging in the
 “ chair, had rendered it, not without reason, suspec-
 “ ted of contagion; which, passing easier through his
 “ sister’s clothes than those of the other gouty person,
 “ had set the gouty fluids in motion, which otherwise
 “ would have lain at rest.”

It has been many times seen, that married women,
 otherwise very healthy, attending on their husbands
 constantly night and day while they lay ill of the gout,
 have themselves afterwards been seized with the same
 disorder; though many others, who have performed
 the like office with as much assiduity, have escaped
 free.

From what has been said, then, it appears reasona-
 ble to conclude, that the gout, especially when in-
 terate and of long standing, is not altogether free from
 suspicious signs of contagion; and therefore it is but
 agreeable

^g Kaau perspirat. dicta Hippocrat. p. 216, 217. Boyle de util. philos.
 experim. p. 291. ^h Miscel. Curios. decur. 9, 10. p. 40. ⁱ In
 capitulo, De vulnerum magnetica curatione, p. 599.

agreeable to prudence, for persons to be upon their guard.

§. 1256. **T**HE season, age, and other circumstances which perform the part of causes, and then the phænomena, beginning, progress, effect, and termination of this disease, being well comprehended, demonstrate the medical causes thereof.

Various causes have already been enumerated from which the gout is produced. At the same time it was observed in particular, that the disease was always uniform and the same, however differently produced.

From different causes, therefore, there is a something generated in our fluids, tending to vitiate them, which in time increases, and, being accumulated, manifests itself at first, if the disease is regular, about the joints of the lower extremities.

We must, in the first place, then, consider this regularity a little, in order to be better acquainted with the nature of the gout. As for the irregular symptoms which come on when disturbed in its own natural course, or when the morbid matter is diverted from falling on the lower extremities, they shall be examined afterwards. When a person therefore, for the first time, has gone through a fit of the gout, which generally is but of short continuance, his joints, formerly so extremely pained, recover their usual agility, and he finds himself altogether sound and well. But when the same causes that brought on the fit continue to act, the same gouty tendency is the consequence; and, being accumulated by degrees, is again deposited on the same parts, exciting all the former pains, and remaining there, till, by a gentle moisture of the part affected, that accumulated matter, which caused the distemper, is expelled out of the body. But this accumulation of the morbid matter is faster, or slower, in proportion as the causes of the disease are more or less powerful. Hence it sometimes happens,

pens, that patients, having recovered from the first fit, cautiously avoid such things as commonly produce this distemper, and by that means live a long time without the least attack. I have known some who have not had a return of the fit for the space of two, nay, even three whole years. It is therefore sufficiently probable, that when the morbid matter, inherent in the part affected, is so far attenuated as easily to pass out by a gentle perspiration; then part of the same may be thrown off in this way, during the intermediate space between two paroxysms: for it is observed, that the heat of summer is kindly and favourable to gouty people; as, on the contrary, the winter's cold is extremely vexatious. Sydenham^k takes notice of some inveterate gouty patients, who cruelly suffered almost all the year, "excepting two or three of the warmer months in the summer;" and remarks in particular, that a fit generally continues two months at a time with the old people before it leaves them: "It does not take leave of old people, or those who are much reduced by the long continuance of the disease, till warm settled summer weather drives it away."

Whence Helmont^l, reflecting on these particulars, says, that this depraved tendency in the humours is what properly ought to be called the gout, the pain being only the manifest effects of this tendency. "For the gout is no otherwise in the toe, than as an apple or fruit is in any vegetable: hence, should you even extirpate the toe entirely, you would not thereby take away the gout: therefore, though it is painful, swelled, or inflamed; yet these are only the effects of the distemper, and not the distemper itself. A cannon-ball in the same manner may take off the foot of any one, but cannot drive off the inherent seeds of the gout or other arthritic disorders from the body." For the whole cure, as we afterwards shall see, consists in this; that, as far as we can, this gouty depravation of the humours may be prevented

VOL. XIII.

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^k Swan's edition, p. 466.^l In capit. "Volup. vivent. morb."

by a wholesome and regular exercise of the body; avoiding at the same time, with the greatest care, every thing that is apt to bring it on; or, if we should perceive it beginning to accumulate, to draw it off by some prudent means from the body, before it has time to be deposited in the joints.

Whence we may understand why gouty people are so much surpris'd on the first attack of the fit, though abundantly conscious of having committed the greatest errors in their diet and way of living.

This is excellently well painted by Lucian^m, where he describes all that happened to Ocypus when he was first seized by the gout, who, willing to hide the disease, obstinately insisted that the pain of his foot arose either from wrestling, running, or a stroke: but his old tutor, who knew better, tells the physician,

*Mendacia tibi dicta, quæque dicta sunt.
Nec enim luctamve, seu cursum, quod indicat,
Exercens ictus est: at hoc mihi credito:
Probe quidem valens primo venit domum,
Bene tum saturatus, affatim potus, miser
In lectulo jacens somnum solus capit.
Tum nocte, somno excussus, exclamat subito,
Divinitus velut ictus: et cuncti timent:
Dixitque, Ve mihi! unde tanta vis mali!
Deus ne quis pedem tenens extra rapis? &c.
Sed quæ modo dicebat, finxit omnia,
Dum dira morbi dissimulat mysteria.*

A heap of lies he has told, and more will tell;
For no one thing he said to him befell.
Trust me, he ne'er from wrestling had a pain,
Nor yet in running e'er receiv'd a strain;
But full of wine, and cramm'd with luscious fare,
Homeward, in hearty health, did first repair:
Then, as the wretch enjoy'd his rest alone,
Waking at midnight with a hideous moan,
Struck, as it were from heaven, alarm'd us all,
And, "Gods! my feet, my feet!" aloud did bawl:
But what he now has told is all a sham
To cover o'er his suffering and shame."

But when, after repeated fits, the distemper is better

^m In Tragopod. Tom. III. p. 670.

ter formed, then physicians, and patients too, taught by experience, can easily foretell, from certain marks, when this accumulated matter is near at hand, and ready to discharge itself upon the joints. Concerning these signs we shall discourse in the following aphorism.

§. 1257. **F**OR the repeated paroxysms of this long lurking disease, are generally preceded by crudities, eructations, heaviness, flatulent torpor, costiveness, feverishness; the usual sweating of the feet ceases, and their veins become varicous; or by a change of the season, or of the weather.

Helmont ⁿ, when he found, upon considering attentively the gout, “ that whether derived from parents
“ as hereditary, or contracted by any peculiar error in the way of living, it was always uniform
“ and the same in regard to its concomitant symptoms;”—he was particularly astonished how “ there
“ should be a peculiar lineament or character of the
“ gout, residing in the seed, like an embryo of the disease, which, like a swallow in the winter, lies quiet,
“ and, as it were, asleep, till awakened by the first
“ paroxysm;” and how that matter should lie so long concealed in the body, as, after many years, to produce the gout, without giving any manifest signs of its existence before-hand. There were, in fact, the seeds of the gout existing; but there were yet the requisites wanting to make them spring forth and germinate. The same thing happens in the intermission between two paroxysms, which sometimes continues a considerable length of time, the patients finding themselves well till this unlucky seed, beginning to germinate, threaten them with a new attack. “ But when this
“ is the case, gouty people are first of all seized with
“ pains about the præcordia, and are in a more nice
“ manner affected with what they eat or drink, and
“ feel the changes of the weather in a more exquisite

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“ degree,

ⁿ In capitulo: “ Volupe viventium morbus,” p. 313.

“ degree, so even as to foretell them ere they come
 “ on: hence a feverishness first of all,”^o &c. And in
 another place^p he says, “ For no sooner does that deep
 “ rooted gouty matter break forth from the bosom of
 “ the vital spirit, in which it lay sealed up, than it
 “ rages violently about the mouth of the stomach,
 “ annoys and vexes the animal system all over; and a
 “ smart feverishness is generally the fore-runner of an
 “ approaching paroxysm.” Several remarks of this
 kind he makes in other places.

The distemper, however, is no where more accurately described than by physicians who have themselves been sufferers. Sydenham^q, who was many years afflicted, and exceedingly attentive in observing the course of this disease, acknowledges indeed, that the fit, for the most part, comes on suddenly, “ except that the patient has been afflicted, for some
 “ weeks before, with a bad digestion, crudities of the
 “ stomach, and much flatulency and heaviness, that
 “ gradually increase till the fit at length begins;
 “ which however is preceded, for a few days, by a
 “ numbness of the thighs, and a sort of descent of
 “ flatulencies through the fleshy parts thereof, along
 “ with convulsive motions; and the day preceding the
 “ fit the appetite is sharp, but preternatural.”

Symptoms, pretty much alike to these, we read of in another author^r, who laboured under a hereditary gout himself; and who observed, that when the paroxysm was near, it was usual to shed a copious quantity of acrid involuntary tears; and that the urine, for several days before, was pale and clear, or a little on the turbid, like lemonade: at the same time remarking, that the longer these signs continued before the fit came on, the severer it would prove; and, on the contrary, the disorder would soon be over, if the urine deposited, in great abundance, a yellow or reddish sediment.

But the progress of this distemper seems to have been

^o In capitulo: “ Volupe vivendum morbus,” p. 315. ^p In capitulo: In verbis, herbis, et lapidibus, &c. p. 465. ^q Swan’s edition, p. 464. ^r La Coste Traite pratique sur la Goute, p. 58, &c.

been always uniform; for most of these signs are to be met with in Cœlius Aurelianus^s. “Symptoms generally attending persons afflicted with a gouty humour, are, A numbness and prickling in the affected joints, a difficulty in their flexion and extension, heaviness, great aversion to employment, and feeling the greatest fatigue from the least motion; sensation of noise during sleep, proceeding as it were from the joints; and, upon waking, a sudden starting of the parts: then follows an unaccountable shivering, or stiffness, and tremor all over, till the humour begins so far to prevail as to discharge itself on one or other of the feet, &c.”

He makes no mention indeed of crudities and indigestion of the first passages, nor of belchings: but these, as Sydenham remarks, continue some weeks before the fit comes on; whereas Aurelianus seems to describe the signs that appear when the fit is on the very point of making an attack.

The usual sweating of the feet ceases, &c.] In healthy persons, the feet frequently sweat; and more especially between the toes there is found a gross, ranker kind, that, when suffered to remain, grows still thicker, and produces a disagreeable excrement of a filthy, stinking smell, particularly in those who pay little regard to cleanliness. “Many gouty people can foretell an approaching fit by the change in the excrement between their toes.” And Hoffman^u says, he has often observed, “a diminution of the usual quantity of perspiration, which is known by the linen, and a deficiency of this excrement between the toes, give sure presages of an approaching paroxysm.” On the contrary, the pain gradually goes off as a moisture appears on the feet, and at last terminates in a gentle sweat, as we shall afterwards see more at large (§. 1261.): for the vessels that were before constricted, and retained the humours that were accustomed to pass through them, being now relaxed

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^s Morbor. Chron. lib. v. cap. 2. p. 558.

“Volup. vivent. morb.” n^o 19. p. 314.

Tom. IV. part. ii. sect. 2. cap. 11. p. 515.

^t Helmont in capitulo,

^u Medic. Rat. System.

again, allow them full liberty to flow as usual.

Veins become varicous.] Every cause that obstructs the free course of the venous blood towards the heart, must of consequence, by accumulating this fluid, occasion a greater distension of the veins. Thus, in women big with child, the enlarged uterus pressing on the iliac vessels, the veins of the legs become varicous; and, unless secured by the gentle compression of a bandage, continue afterwards swelled, and very much distended, all the rest of their lives. The same thing happens to weavers, and other artificers, who hang their legs all day long, and have no occasion to employ their lower extremities in any brisk muscular motion; as also in those whose business obliges them every day to stand long in an erect posture; for it is in this case difficult for the venous fluid to ascend in opposition to the general tendency of gravitation: hence it is that such people, especially when they grow in years, have their feet swelled, and their veins varicous. It is true, indeed, there are valves in the veins of the lower extremities to hinder the pressure of the whole column of blood on the lower part of the vessel: yet there is a sufficient impetus of the blood requisite to raise up these valves; which, if wanting, the blood, being accumulated behind each series of valves, must dilate the veins, and by that means produce varicous knots. But, seeing the impetus of the arterial blood poured into the veins imparts motion to the fluids that circulate already there, and seeing the motion of the arterial fluid is diminished by the obstructed perspiration in the feet, it necessarily follows that the motion of the venous blood will be retarded, and so the veins of course must swell. Moreover, in gouty people, especially those who have been long afflicted, muscular motion is but feeble: Now we all know, that the muscles are every where adjacent to the veins, the arteries having their situation below, for this reason, that the muscles in time of action may, by their swelling, press upon the veins, and so the motion of the venous blood be increased: and hence it happens, that those in the vigour of life,

who

who have not as yet, by frequent paroxysms, lost the agility of their feet, have their veins by no means so much distended; but during the time of the paroxysm, when pain obliges them to keep their limbs free from motion, then indeed their veins become a little swelled.

From this we may learn, why the ancient physicians prescribed the opening of a vein: it was, no doubt, because they observed the veins very much distended in patients when they complained of intense heat, and more especially when there appeared a redness on the part. Aëtius^w informs us of his having followed this practice: "But if the right hand is the part affected with pain, then we open a vein in the right leg, about the heel, or behind the knee, or toward the foot: but should the pain still continue after the bleeding, and there is a high degree of tension on the part affected; in that case, I have often known a person relieved of his complaints, by opening a vein in the inflamed member itself, and taking a pretty large portion of blood away." Concerning blood-letting in the cure of the gout, see more at §. 1270.

When they observed the veins so much distended, and knowing nothing of the circulation of the blood, it seems they were led to imagine, that the cause which formed the disease was conveyed by their means into the part affected; and so they thought, by opening them, they would intercept the afflux of the morbidic humour. This seems to be the opinion of Rufus^x, who, willing to try all methods, however different, in a distemper so obstinate, advises the following: "If therefore the veins are opened in the same manner, as in varicous swellings, the quantity of blood can no longer increase the inflammation as it used to do; and this will therefore be principally of advantage in the inflammatory gout." At present, we know, that the veins carry out nothing to any particular part, but serve only to transmit the returning fluids from all parts of the body back to the heart. Since then the material cause of the gout is not by any means generated in the foot, the morbidic matter arising

^w Serm. 12. cap. 23. p. 316.

^x Ibid. cap. 24.

sing from some other quarter, and being only deposited there; and seeing that, if it is hindered from being thus deposited, the consequence of being dispersed elsewhere is still more hurtful; we have therefore no occasion to put in practice that cruel operation^y which a celebrated ancient bore so philosophically: *Ille qui dum varices exsecandas præberet, legere librum perseveravit*^z; “he who continued reading a book with great composure, while they were cutting his varicous swellings.” Yet Caius Marius, having varicous swellings in both legs, and consenting to let them be cut, went through the operation on one with great firmness, not so much as fetching a groan, or even knitting his eye-brows: but when his physician was preparing to perform on the other, he stopt him, saying, it was a remedy too dearly bought by so much exquisite torment^a.

A change of the season, or of the weather.] It has been mentioned already, (§. 1254.) that the gout renews its attack generally in spring and autumn. It does not appear however to be entirely limited to these seasons; for even Sydenham^b, the most accurate observer of this distemper, describing a regular gout, says, that it began to make its attacks all of a sudden at the end of January, or about the first of February. Another medical writer^c acknowledges indeed, that the fits of this distemper are mostly excited in winter or autumn: yet in many instances, of himself and others, he has known the attacks renewed at all times of the year; and some he knew that had the returns of the paroxysms every three months: nay, he says, he has seen some attacked even in the very middle of summer, who continued ill till near the beginning of autumn; which however, it is likely, very seldom happens, as gouty people, for the most part, use to find themselves greatly better in the summer months: Which appears to have been observed also by Cœlius Aurelianus^d, who says, “It seems not only to be pre-
duced

^y Vide Celsum, lib. vii. cap. 31. p. 495.

^a Plutarch. apothegm. Tom. II. p. 202.

^c Coste Traite pratique sur la Goute, p. 59.
cap. 2. p. 558.

^z Senec. epist. 78. p. 532.

^b Swan's edition, p. 464.

^d Morb. Chronic. lib. v.

duced at particular seasons, but also in point of severity appears to be very much influenced by them; as, for instance, in the spring it has the highest degree of severity, in autumn not so great; still less in winter, and hardly any at all in summer." It must, at the same time, be observed, that an unexpected fit may be brought on at any time of the year by the causes mentioned in the following aphorism.

§. 1258. **A**LL errors committed in the non-naturals, which produce crudities, hasten and bring on the fit unexpectedly. Hence immoderate venery; sitting up late at study; hard drinking; eating asparagus, fat bacon, and the like; fatigue; passions of the mind; a purge only; moist, cold, tempestuous weather; are all hurtful to gouty people.

We have already remarked, (§. 1255.) that errors in diet are justly to be reckoned among the causes that give rise to the gout: it appeared at the same time plain, that the morbid matter was accumulated during the intermediate time between each paroxysm, which afterwards lay in readiness to discharge itself upon the joints. It is not at all surprising, therefore, if any error committed in the use of the nonnaturals should occasion crudities, and accelerate a fit: For, as Aretæus observes^e, "should they escape the present danger, freed, as it were, from hell-torments, they plunge into a life of enjoyment, &c. therefore, like those who know they must soon encounter death, leave not a minute of the time they have unemployed in some voluptuous indulgence or other." Neither is it unusual for them even to sneer at a physician who would pretend to lay down rules for their way of living. A gouty patient^f was advised by his physician to abstain from eating hams of any kind:

"No,

^e De Caus. et Sign. Morb. Diuturn. lib. ii. cap. 12. p. 67. ^f Essays de Montagne, Tom. I. p. 18.

“ No, (says he); for then I should deprive myself of
 “ one of the greatest comforts of my soul, which is,
 “ that during the greatest torments of a fit, I can be
 “ at liberty to accuse these eatables, and have the
 “ pleasure of bestowing on them a few hearty curses.”
 Whence Galen conceived hopes of a cure from those
 only who were afterwards contented to live a life of
 strict regularity: *For as to the intemperate, and those
 who are addicted to drinking and the luxuries of eating,
 you will never be able to do them any service, either by
 purging, bleeding, or any thing else whatever; because,
 by their intemperate way of life, in the shortest period of
 time they accumulate the greatest quantity of crude and
 indigested humours: So that as to such, you must not pre-
 tend even to attempt their cure*^g.

Besides, any too sudden change of diet, even tho’
 it is to a better kind, is yet very ready to bring on an
 unexpected paroxysm. For Sydenham^h rightly ob-
 serves it to be very prejudicial, “ if those who have
 “ had a voracious appetite, and used spirituous liquors
 “ immoderately, quit them of a sudden for those of a
 “ thin and cooling kind:” for, in that case, there is a
 too sudden change made in the body; and, if the
 gouty matter be in any degree accumulated, a paroxysm
 must in a short time be expected. Many gouty people,
 when freed from pain, enjoy a tolerable good ap-
 petite, who yet, as long as the pain continues, can
 touch nothing that is set before them. In some, the
 loathing of all kind of food used to be a certain presage
 of an approaching paroxysm. Very rarely do we see
 so uncommon a *fames canina*, joined with a fit of the
 gout, as in that remarkable case related by Du Hahnⁱ,
 which he says was so very keen, “ that, unless the
 “ servants brought in the dishes of meat the moment
 “ he called, the patient was seized with a most dis-
 “ agreeable reaching, and spasmodic twisting of the
 “ gullet,

^g Intemperantes enim, vinososque, et ventri ac gulæ deditos, neque
 purgatione, neque sanguinis missione, magnopere adjuveris; nam per
 vitæ intemperantiam crudorum humorum copiam ocysime colligunt.
 Verum his ne manum admovere tentandum est. *De Curand. Ratione per
 vanasectionem, cap. 7. Charter. Tom. X. p. 436.*

^h Swan’s edit. p. 464.

ⁱ Histor. Podagr. Eminentiss. &c. p. 4.

“ gullet, till the stomach, irritated by an eager sensation of hunger, threw up with violence a quantity of bile and phlegm.”

Instances of persons seized of a sudden with severe fits of the gout, at the celebrating of the feasts of Bacchus, we know were very common, after a liberal indulgence, and, as the custom was, revelling and debauching till midnight. Ocypus had no sooner laid himself down, drenched in liquor, and his belly well stuffed with meat, but he waked in a sudden and unexpected fit^k.

Immoderate venery.] This has been already handled at §. 1255.; only it is necessary to remark, in passing, that many gouty people, just before the fit, are observed to have rather a more eager desire for that enjoyment.

Sitting up late at study.] How much this contributes to bring on the gout, has also been shewn at §. 1255. I knew an eminent mathematician, to whom this disease was hereditary, who, though he lived with great sobriety and chastity, yet, by long and constant application to the solution of a difficult problem, brought on a sudden fit of this distemper; for it had always before this been very regular, and generally at stated periods used to pay him a visit twice a-year.

Eating asparagus, fat bacon, and the like.] Asparagus, which is so agreeable a dish at most people's tables in the spring, has in it this singular property, that, when tasted, even in the smallest quantity, it gives the urine, in two minutes time, a rank subputrid smell. Whence Helmont says^l, “ Asparagus smells so rank in the urine, as if some putrid matter had attached itself to it, and was in a hurry to escape along with it out of the body.” The smell, however, which is perceived in the urine after eating asparagus, is entirely different from the smell of the same when either raw or boiled: Which is particularly remarkable; because garlic, for instance, smells the urine, but then it is with its own particular flavour.

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^k Lucian. Tom. III. p. 670. ^l In Capitulo: *Aditus præclusus*, &c. n^o 12. p. 446.

We see then of how penetrating a nature this plant is from the sudden change it produces in so short a time upon the urine. Hence it seems to have been classed in the shops, on this very account, among the five opening roots. Sound healthy persons, indeed, may eat any quantity of this vegetable without any harm; but many gouty people, who have eaten largely, have observed it, from experience, to hasten the paroxysm. It is by this penetrating quality that it agitates and sets the morbid matter in motion, which hitherto lay quiet? Trallianus^m, indeed, condemns cabbages, cresses, rocket, leeks, and garlic, as hurtful in this disease; all which impart a different smell to the urine. He also considers all kinds of fat, especially bacon, as hurtful, because they easily give rise to crudities, and, when taken in large quantities, can only be digested by persons that are very robust, and constantly employed in hard labour. See what has been said concerning their ill effects in the cure of wounds, §. 196.

Fatigue.] From what was said in treating of the causes of fevers (§. 586.) it appeared pretty plain, that the most acute fevers may arise solely from a too brisk and too long-continued motion of the body; especially in those who have not been accustomed to strong bodily exercise: whence it is evident, that all the fluids, being thus agitated by the quickness of circulation, occasioned by this excessive motion, must likewise greatly affect the morbid matter; while, at the same time, the feet, being pained with too much fatigue, will the easier determine the 'metastasis towards the lower extremities. On this account Sydenhamⁿ, tho' he mightily recommends daily exercise to gouty patients, yet anxiously inculcates this admonition: "By
" no means let this exercise be too violent, but only
" such as may be convenient to old people, who,
" in general, are the most liable to this distemper:
" for all violent motion dissipates the spirits too much;
" whereas moderate easy exercise, continued, keeps
" up and strengthens them."

Strong passions.] Gouty people are so easily provoked

voked to anger, that Sydenham^o did not scruple to say of this distemper, “ that every paroxysm of this distem-
 “ ease should be called rather a fit of anger, than a
 “ fit of the gout.” I had long an intimate friendship with a person of very great learning, and otherways of a sweet, peaceable, and mild disposition, who, taught by his experience, could at last exactly foretell when he was to have a fit, by his being peevish a little before, and out of humour at every trifle. Sydenham^p too observes, that gouty people are not only subject to anger, but also to other passions, such as fear, anxiety, and the like; and regain not their usual tranquillity till such time as the fit is over, and the pain and sickness leave them. What disturbance the passions of the mind can excite in the body, hath already been taken notice of in the history of Fevers, and in the chapter concerning the diseases arising from an Excess of Circulatory Motion.

Ægineta^a has very well observed, that in gouty persons there is a pre-existent matter, hitherto lying dormant, which is roused into action by the more immediate cause of the disease: and so the passions of the mind, as they wonderfully influence the whole body, may, as more immediate causes, do mischief. But Ægineta holds them to be hurtful in another sense: for he says, “ Anxiety, cares, and other passions, not
 “ only produce commotion, but also serve to gene-
 “ rate a bad habit of body, either more immediately
 “ at once, or at some future period by consequences
 “ more remote.” And hence the passions may act either as pre-disponent causes, or as those more immediate ones which accelerate the distemper.

Did it not appear from innumerable observations, how great are the changes wrought in the human body by the strong and sudden affections of the mind, it would be difficult to believe all the instances given of the cures performed by them on this distemper. We read^r of a person in the gout, for his spiteful and abusive temper, very much disliked by every body; whom

VOL. XIII.

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another

^o Ibid. p. 555.^p Ibid. p. 582.^a Lib. iii. cap. 78. p. 57.^r Hildan. Oper. Omn. p. 993.

another person, disguised in the form of a frightful spectre, snatched out of bed, and, taking him upon his back, walked down stairs, making his feet, already in so much pain, strike all the way down against the steps, paying no regard in the least to his terrible cries, and at last left him below on the floor. The gouty man, who before could not stir a limb, got up on his legs in a hurry, ran up stairs, and, opening the window of the chamber, alarmed all the neighbourhood with his noise: however, he got well, and never after was seized with the distemper. Another gouty person, condemned to lose his head, as they carried him out in order to be executed, received the most unexpected news of his pardon; which had so remarkable an effect upon him, that although he was quite exhausted with pain, and had lost the use of every limb, yet he got up on his legs immediately, and walked with remarkable quickness and agility, and lived many years after without having the least touch of the disorder^s. This case is preserved in the public records, and therefore merits some degree of credit.

A purge only.] What opinion we are to form concerning the use of purgatives in the cure of the gout, we shall afterwards see when we come to §. 1271. Here we are only to consider them as being suspected of accelerating the gouty paroxysms. Many physicians are of opinion, that part of the gouty matter may be carried off by purgatives, and the fit rendered much more mild, especially if it be occasioned from errors in diet. Hoffman asserts, “That all pains, in “ whatever part they be, are rendered milder by clearing the primæ viæ, before the use of other remedies^t.” He gives an instance, even in himself, of his having found the most remarkable benefit from taking a purgative immediately before the fit. He tried this chiefly with a view to clear the first passages of the fæces, and draw off some noxious humours lodged too long in the duodenum, or other parts of the alimentary canal: and for this purpose he principally recommends

^s Ibid.^t Medic. Rational. et Systemat. Tom. IV. parte ii. sect. ii. cap. 11. p. 259.

commends emollient clysters, rhubarb, manna, and cream of tartar, above all others, as giving least disturbance to the body. Yet Sydenham^u, whose authority in this distemper is of the greatest weight, says, that he is very sure that any cathartic medicine whatever, whether strong or gentle, must be hurtful, taken either at the time of the fits, or even during the intermediate intervals: “For I have learnt at my own peril, as well as that of others, that purgatives exhibited at any of these times, have, instead of doing service, hastened the mischief they were intended to prevent.” Although afterwards, when he was afflicted with bloody urine, from the stone in the kidneys, he took some manna, which gave him considerable relief, and a little liquid laudanum in the evening, to quiet the disturbance from the purgative, and by that means prevent the return of the gout^w. He acknowledges indeed that this method happened to succeed with himself, and so purgatives might also be successful with other gouty people, administered in the same manner, and under the like symptoms; but, in general, he continued firm in the same opinion, that purgatives were hardly ever of any service in this distemper. Whence Lucian^x makes the goddess Podagra say, that she would fall with greater fury upon those who purged themselves with the sacred potion, that is made of the *hiera picra*, aloes having the greatest share in that composition.

A cold, moist air.] Fits of the gout, for the most part, return in the spring and autumn, because at these seasons the most considerable changes of the air happen. Gouty persons find the greatest relief from a warm air, and this makes them anxious to keep the affected joints well covered. We read of a certain person^y so miserably affected with the gout, in the thirty-first year of his age, that he lost almost entirely the use of his hands and feet; who having been obliged, on some particular business, to take a voyage to the East-Indies, in three years afterwards returned.

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^u Swan's edit. p. 475.^w Ibid. p. 588.^x Tom. III. p. 655.^y Heinsius *Verhandeling van het podagra*, p. 167.

to his native country in good health, cured by the heat of the climate alone, and never afterwards had the least attack. The celebrated Du Hahn remarks, “That the north wind in particular so exasperates this distemper, that, by a softer wind blowing from any other quarter, it is considerably mitigated^z.” But as catarrhs are frequently produced from the same inclemency of the air, he observed it was common to almost all gouty persons to have a catarrh and fever by turns, in a sort of vicissitude: for though persons in the gout are said not to be very subject to epidemical distempers, yet “epidemical catarrhs were so far from sparing those that were gouty, that they rather served to exasperate, and make the distemper come on with double force; and some were attacked by the catarrh and gouty pains by turns^a.” whence he was induced to believe, that the sharp gouty matter, mixing with the catarrhus phlegm, by that means was ejected out of the body; or not being allowed to pass out in that manner, excited afresh all the pains of the gout. In the beginning of a catarrh, the nostrils and upper lip are very much inflamed, and the skin almost eroded by a sharp humour distilling from the nose, which, if it gets into the mouth, is of a saltish taste. This humour, when examined with a microscope, appears full of little saline spicula^b. Should this efflux of acrid catarrhus humour be by any means imprudently stopped, sometimes the very worst of consequences follow. Thus Willis^c observes, that a catarrh, suddenly dried up by the fumes of succinum, threw the patient immediately into very dreadful convulsions. It will be shewn afterwards (in §. 1273.) that the gouty matter in the same way, if it is not derived to the usual parts, produces the most terrible mischiefs.

§. 1259. **T**HE place which the gout first and regularly attacks, is always the foot,

^z Histor. Podagr. Eminentissim. &c. p. 13.

^a Ibid. p. 21.

^b Haarlensche Maatschappy, Tom. II. p. 101. in notis.

^c Patholog. Cereb. p. 124.

foot, and chiefly those parts of it through which the fluids circulate with the greatest difficulty; as the periosteum, the tendons, nerves, membranes, and ligaments; which, being at a greater distance from the heart, are the most compressed.

Notwithstanding this disease, as we have already observed, acquires other appellations according to the places on which the morbid matter fixes; yet, since it always begins at the feet, if regular, it is therefore called the *gout* by every one, even though it occupy several other parts of the body, as we shall see in the following aphorism.

Lucian^d, who, though he derides the sufferings of gouty people with a great deal of satyrical wit, at the same time gives an excellent picture of this disease, brings in the Gout, just as it is about to invade Ocy-
pus, speaking as follows:

*Ego, quam mordet ira (quidni feminam?)
Morsu hunc remordi certo et insanabili,
Ut est solemne mihi ferire artum pedis;
Et jam dolor dirus parvum tenet locum,
Soleamque terebrat inam punctiōibus.*

I, like a furious female vex'd at heart,
Have, as my custom is, with woful smart,
Fix'd in his foot-sole my invenom'd sting,
Which, tho' contain'd in little, yet doth bring
Much cruel anguish to his tortur'd feet.

Whilst intending to punish the two physicians who had boasted of a secret which, rubbed upon the parts, removed the pain immediately, she calls the *Pana* forth from their bacchanalian friends, and gives the following orders to the gouty powers^e:

———*Tu quidem pedum extimas
Soleas adurito, digitos ad usque pedum;
Tu malleolas invade; tuque a femoribus
Ad genua stilla amaram in intima saniem;
Sed vos manuum digitos agite, constringite.*

You—burn the toes and joints of both their feet;

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You

^d Tom. III. p. 666.

^e Ibid. p. 661.

You—prey upon their ancles ; from their hips
Down to their knees do you be sure diffuse
The deep-corroding juice ; and you—as soon
Their finger-knuckles and their wrists invade.

And though she inflicts all the torments of every species of the gout upon the wretches, and obliges them to confess, *Podagram non deliniri pharmacis, non obsequi*, “ That the gout is neither obedient to, nor “ will be soothed in the least by, the power of medicine ;” yet she still begins at the feet ; as also ^f when she enumerates all the parts of the body, which *adedit, depascitur, urit, tenet, inflammat, coquit*, “ she “ gnaws, wastes, burns, shackles, inflames, and vexes.”

I have often admired the exactness of Lucian's description of this disorder, when I compared it with Sydenham's^g: for in his account of the progress of the gout, he says, *Est, ubi femur occupans sensum exhibit quasi ingentis ponderis appensi, sine dolore tamen notabili ; at genu exinde petens id acrius urget, motum omnem inhibens, ut, quasi clavo transacto, lectulo affixum ne latum pilum a loco, in quo est, se queat dimovere* ; “ When it “ fixes on the thigh, there arises the sense of a vast “ weight hung, as it were, on the part, without any “ remarkable pain however : then getting down into “ the knee, it is somewhat more outrageous, taking “ away all power of motion, and fixing it like a nail “ so close to the bed, that it cannot by any means “ move a hair's-breadth from the place where it is “ once laid :” So in Lucian, the Gout does not order her ministers to gall and vex the thighs, but *a femoribus ad genua stillare amaram in intima saniem*, “ to “ distil a bitter sanies from the thigh into the inner “ parts of the knee ;” which entirely agrees with the observation of Sydenham.

The seat of the disorder is marked thus by Aretæus^h: “ At first, the nerves, ligaments, and whatever rise “ out of the bones, or are inserted into them.” He points out the places, too, where in gouty people the pains are for the first time felt : “ The pain first seizes “ the

^f Ibid. p. 652. ^g De Podagra, p. 551.
Morbor. Diuturni. lib. ii. cap. 12. p. 65.

^h De Caus. et Sig.

“ the great toe ; next, the edge of the heel that first touches the ground when we walk ; next, the hollow of the foot ; and, last of all, the ankles swell.” This also agrees with the observations of Sydenham : for, first, “ the pain usually seizes on the great toe ; but sometimes on the heel, the calf of the leg, and the ankle i.” From whence he afterwards concludes in general, that, in this disease ^k, “ the feet are the genuine seat of the peccant matter, which may, without doubt, fix itself on other parts ; but in that case, it is plain, that either the progress of the distemper is inverted, or the patient’s strength, from repeated attacks, is now gradually impaired.”

Now, if we consider with how much difficulty the liquids pass through these parts, which are generally first attacked by this disease, we may form no improbable notion why the gout is observed, for the most part, to begin at the feet : for these suffer a very great pressure upon the parts about the heel, having the weight of the whole body to sustain ; and, being far removed from the source of circulatory motion, the heart, they are subject to cold and moisture ; and the liquids, that are brought down to them through the arteries, by course of circulation ascending through the veins again, have the general effort of gravitation to overcome. All these things plainly demonstrate how easily matter of one kind or other may be retained and collected at these places. If at the same time we consider the number of ligaments, tendons, &c. parts which appear from anatomical injections to have vessels of incredible minuteness, we shall be at no loss to comprehend how numerous the obstacles are to a free circulation of the humours. And this is farther confirmed from observing, that the disease is much more frequent among the old, and such as are growing in years, many of whose smaller vessels are shut up, than with young people, whose vessels are all open and pervious, and easily yield to the impulse of the humours. The feet too are liable to hurts in walking, leaping, or from a sudden fall, &c. from which,

as

i De Podagra, p. 547

k Ibid. p. 550.

as *Ægineta*¹ observes, many have the first experience of this painful disorder: the morbid matter being ready prepared, as it were, and at hand, is brought to exert itself first from this mischance. I myself remember to have seen a person who strained his foot exceeding painfully; and, ere he recovered of the hurt, had a smart fit of the gout; nor could he by any means believe it to be that distemper, till about a year afterwards, that it paid him a second visit. It is with great propriety, therefore, that in *Lucian*^m, when the chorus of gouty people are brought in singing the praises of the goddess *Podagra*, among other epithets she is called *επιδισμοχαρες*, as delighting chiefly to affect the ligaments.

I have known, indeed, some very eminent physicians, who, neither wishing to mislead, nor very apt to be misled themselves, have from experiments concluded, that the ligaments were destitute of all sensibility, and could not be the seat of gouty pains; but that it must have its residence in the skin alone, and the nerves which run along its internal surfaceⁿ. And yet there are others too, men of the greatest name, who, from observation, confirmed likewise by experiment, have maintained a contrary opinion. *Sydenham*^o, thus describing all his own sufferings under the gout, says, “ But this pain is mild in the beginning, “ but grows gradually more violent every hour, and “ comes to its height towards evening, adapting it- “ self to the numerous bones of the *tarsus* and *meta- “ tarsus*, the ligaments whereof it affects; sometimes “ resembling a tension or laceration of those ligaments, “ sometimes the gnawing of a dog, and sometimes a “ weight and constriction of the membranes of the “ parts affected, which become so exquisitely painful, “ as not to endure the weight of the clothes, nor the “ shaking of the room from a person’s walking briskly “ therein.” Now I can scarcely think that *Sydenham* ever entertained a notion of this exquisite tormenting pain’s

¹ Lib. iii. cap. 78. p. 57. ^m Tom. III. p. 656.
Dissertat. sur les parties irritables et sensibles, &c. p. 20.
edit. p. 465.

ⁿ Haller.
^o Swan’s

pain's being seated in the skin alone. Besides, he remarks^p, that the least motion of the part affected raised that kind of pain, "which is only tolerable for
 " this reason, because it soon goes off, &c. for the pain
 " is not very violent the whole paroxysm throughout,
 " in case the part affected be kept quiet."

Again, let us consider how highly painful this distemper is observed to be, when there is neither any apparent swelling on the part, nor change of colour on the skin: let us consider too the relief that follows from the swelling and redness of the skin coming on^q; as we have an example of this in the case of a physician who laboured under a hereditary gout: when the pain was arrived to its utmost pitch of severity, the joint swelled, the skin grew red and inflamed; and whilst the parts were thus in the highest degree of tumour and inflammation, his pains abated; which pains, on the contrary, must have been very intense, had the disease been seated in the skin only, and not rather in the parts enumerated in the text. Add to this, the exceeding debility this distemper leaves in the parts after the fit is gone, occasioned from its residing within the joints; which, in course of time, deprives them sometimes of their motion altogether.

§. 1260. **W**HEN the parts enumerated in the above aphorism, are at length shut up by obstruction, tumour, or infarction; or when the matter of the disease is by any cause dispersed into other parts of the body; it excites the same symptoms in these parts, as it did in the former where it first fixed itself, §. 1259.

In the first fit of a regular gout, one or other of the feet is commonly attacked: sometimes, when the disease grows stronger, both feet are at the same time affected, if the gouty matter happen to be more redundant^r: for the most part, however, one foot is affected after the other, in succession. But when
 the

^p Ibid. p. 468.

^q Ibid. p. 465. Coste Traite sur la Goute, p. 60.

^r Sydenham, p. 466.

the disease has been put out of its natural course by any improper means of cure; or by the length and obstinacy of the distemper the whole substance of the body is converted, as it were, into a gouty leaven, or supplies for the disease; or when nature is unable to expel it according to her usual way^s; then it not only seizes the feet, hands, wrists, elbows, knees, and other parts of the body, and even many of them together at one and the same time; but also the parts, which were formerly infested, undergo sometimes a most surprising change: the vessels, stuffed up, and pressed from without by the adjacent swelling of the part, are, by this means, rendered unfit to receive the gouty matter, which, finding no admission here, discharges itself at last on other parts of the body: whence Aretæus had reason to say, “Had the member it occupied at first been large enough to have contained it, the other parts would have escaped free^t.” However, it travels all over the body, yet in such a way as principally to fix on the parts enumerated in the preceding paragraph. “Commonly it passes quickly from the feet to the hands: nor is it very material which of them it occupies, seeing these parts are in their nature so very similar; not at all fleshy, but slender, much exposed to the effects of cold, and very remote from the source of internal heat.” He afterwards remarks how surprisingly the disorder gains ground, and recounts all the various parts which sometimes are affected; “the nostrils, ears, and lips, are injured last of all.” These observations are in general confirmed by Aëtius: “Persons, in a highly confirmed gouty habit, are afflicted with pain in the joints of the vertebræ, in the ribs, and also in the cheek-bones; and some have pains about their throat, there being hardly indeed a joint in the whole body that escapes^u.”

We shall see afterwards (§. 1273.) how this gouty matter, hindered from discharging itself on the accustomed places, lays hold on the viscera, and produces

^s Ibid. p. 467.
cap. 12. p. 66.

^t De Causis et Signis Morbor. Diuturn. lib. ii.
^u Serm. 12. cap. 6. p. 308.

duces the most suprising and dangerous symptoms.

Whence it is plain, that the gout is naturally directed to the joints; but when the morbid matter is either too redundant, or can no more find admission into the usual places as formerly, it may then be dispersed over every part of the body.

This is very often observed in long-standing gout.

Thus Du Hahn^w says, he saw a case where the fit once began in the right hand, then seized upon the elbow and right foot, at the same time attacking the left side, where the ribs appeared to be raised a little, and streaked with a reddish colour: from thence it passed on to the left hand, and so down to the foot of the same side. But the patient's face was also covered over with frequent and burning flushings; and "a burning heat, like flaming fire, harrassed his whole head, with so troublesome a sensation, that he could not bear even the slightest covering a moment upon it. Thirty-seven days had now passed, when a stiffness and tumour in the neck, a more intense degree of heat, want of sleep, extreme pain a-top of the head, and a spasm in one of his knees, were all at work together upon him." In another paroxysm the disorder began at the right foot: seven days after, it affected the ribs of the left side, occasioning a difficulty in breathing, and the greatest uneasiness in swallowing: then the pain seized upon the left ear, elbow, and hand: the lingual bones too, of the same person, he observes, were affected; attended at the same time with a troublesome spasm, which hindered his deglutition; but, the same day, as soon as the pain came into this hand, this uneasiness of the throat went off^x.

Platerus affirms^y, that he has seen nodes, full of concremented gouty matter, grow up in the ear itself: nay, "he observed once, in a merchant, who had been long and miserably afflicted all over his body, to the very pores, not even the eyelids exempted, a chalky kind of substance of the same nature, which, gathering about the pores of the skin, rose up into tophi."

Many

^w Hist. Podagr. Eminentiss. &c. p. 5, 6.

^x Ibid. p. 21.

^y Prax. Medic. Tom. II. p. 598.

Many instances of this kind have also come under my own observation; but these are sufficient to shew how extensive the dominion of the gout is, when deeply rooted, over the whole body. We have therefore in course to consider the particular symptoms that affect the patient during the time of the paroxysm, the order in which they succeed one another, and after what manner they at last entirely disappear.

§. 1261. **T**HE gout begins with a stretching, tearing, and straitening pain, gradually increasing, and again decreasing with a moisture, redness, and tumour: it terminates by a diaphoresis, the heat of the bed, an itching, and scaling; or by generating a chalky matter, which tears the vessels and ligaments of the joints, and deprives them of their figure, motion, and use.

There is no one can describe a disease more accurately than a physician who has himself been a sufferer; and more especially if he has been accustomed to the observation of diseases, not in a cursory or hasty manner, but with due and accurate attention. Thus Sydenham actually describes his own sufferings; and for this reason it is that his treatise on the gout is so justly admired by all.

For notwithstanding, as we have already observed, (§. 1257.) there are certain changes in the body, which commonly precede a fit when near at hand; yet they are so slight, that many either heed them not at all, or ascribe them to some particular error in their diet: nay, although they are suspicious, and in fear of an attack, they are yet never certain, and therefore it always comes upon them of a sudden and unexpected. People seemingly go to bed in good health, and are wakened at midnight, “and, roused from their sleep, “cry out suddenly^b.” “The the pain resembles “that of a dislocated bone, and is attended with a “sensation, as if water just warm were poured upon “the

“ the membranes of the part affected; and these
 “ symptoms are immediately succeeded by a chilness,
 “ shivering, and a slight fever^c.” I have heard persons complain miserably, as if a wedge was, by degrees, driven in between the bones, racking and tearing all about them: there is often too a most painful stretching of the tendo Achillis; *nervumque tendit, vir sagittator velut telum emissurus*, “ as an archer stretches
 “ his bow ere he lets fly his arrow^d.” and the goddess Podagra^e boasts, that, *animadvertente nullo incurrens artubus*, “ all unobserved into the joints she runs.” Coste^f remarks too, that the fit is always more or less severe in proportion to the degree of fever in the beginning.

“ The chilness and shivering abate in proportion as
 “ the pain increases, which is mild in the beginning,
 “ but grows gradually more violent every hour till
 “ evening, when it arrives at its utmost degree of severity^g.” Then the miserable sufferers express the sensation of their torments variously; some perceive, as it were, a tightness and strong compression; others, a gnawing; and some again cry out, there is a burning coal within the part: for the gout *adedit, depascitur, urit, tenet, inflammat, coquit^h*, “ gnaws, wastes, frets, possesses, inflames, and vexes.” Through the bitterness of pain the patients commonly throw about all the members that are untouched, and are perpetually trying to find relief from changing the posture of their body, or situation of the parts affected; which yet they seldom obtain till “ two or three in the
 “ morning, that is, till after twenty-four hours from
 “ the first approach of the fit; when the patient is
 “ suddenly relieved, by means of a moderate digestion
 “ and some dissipation of the peccant matter, though
 “ he falsely judges the ease to proceed from the last
 “ position of the part affectedⁱ.” A hundred times I have heard gouty people chide their domestics, because they could not sooner hit upon that particular
 Vol. XIII. F situation

^c Swan's edit. p. 465.^d Lucian. Tom. III. p. 666.^e Ibid. p. 665.^f Traite sur la goutte, p. 61.^g Loco modo citato.^h Lucian,

Tom. III. p. 692.

ⁱ Loco modo citato.

situation which had, as they thought, given them this immediate relief; and, when they have been persons of angry tempers, they have, on some occasions, either increased the distemper by their untimely passion, or at least diverted it from its natural course.

A gentle moisture of the skin soon follows, and then the patient falls into a sleep, and when he awakes, rejoices to find the pain abated, and the part affected swelled all over; whereas, before, only a remarkable swelling of the veins thereof appeared, as is usual in all gouty fits^k.

A dryness of the whole skin, when persons are under very severe fits of pain, is usually seen, not only in the gout, but also in many other disorders; and whenever this is succeeded by a moisture of the whole skin, and particularly on the part affected, the patients generally are relieved from pain. This I have often observed in colics, tooth-aches, and pains of the ear, that were almost intolerable. Hot sudorific medicines are not however thought proper in these cases, as they rather increase the heat and dryness; diluent, emollient, and relaxing medicines, externally or internally administered, are found of much greater efficacy. In gouty people again, when the cause of their pain is subdued, and changed by the warmth of the bed and a slight degree of fever, the cutaneous vessels, formerly blocked up and constricted, are now opened and set free. How excellently this is set forth by Lucian^l, where he brings in a person, in great misery from the gout, recounting all his sufferings!

*Ut aridum atque ærumnabile corpus meum,
Manibus a summis, ad pedum vestigia,
Sanie mala, atque amaro succo felleo,
Violento spiritu clausis meatibus,
Constitit! ut clausum dolores exacuit!*

How is this dry and grievous corpse of mine,
From fingers ends to soles of feet and toes,
By gnawing humour's vile corruption maim'd,
That with astringent streams contracts my pores,

Enters

^k Ibid.

^l Tom. III. p. 564.

Enters the sinews, and with exquisite pains
Renders my life a burden insupportable!

It is observed, that the severest gout is that in which there is neither swelling nor discolouration of the part; because it is likely the morbid matter is locked up and retained in the finer vessels. Hippocrates^m, after having remarked that the gout is, of all the disorders that infests the joints, the most violent and lasting, and the most difficult in its crisis, adds, “ But as this “ disease chiefly resides in the most minute vessels, “ and in parts so constantly necessary to the body on “ all occasions, as also in ligaments, and even in bones “ that are so dense, it is therefore the most lasting “ of all disorders, and hardly ever to be subdued.” Hence too may appear the reason why the ancients distinguished the gout into hot and cold. For, when they saw a joint seized by the gout swell, look red, and grow hot, they classed this disorder among hot tumoursⁿ: “ But if the pain was deep seated in the “ ligaments, and the joint remained of its usual size, “ without heat or swelling, that I should term a *cold* “ kind.” And in this last case he prescribes warm stimulating remedies: “ For warmth excites the parts “ to swell, and draws forth the internal heat towards “ the surface.” That exceeding cruel kind of gout, which finishes its course without either redness or swelling on the part, we very seldom meet with; for generally, though there is no tumour or redness in the beginning of a paroxysm, yet always, as the disorder takes a more favourable turn, these appear upon the part. Hence Aretæus^o, from generally observing this change, advises the use of warm medicines in cases where the part is long of swelling, and to change to a cooler regimen as soon as the tumour and redness appear: then he adds, “ In short, to say all, “ warmth and heat are requisite in the beginning, and “ coolness towards the end.” The like division of the gout into hot and cold we read in Cœl. Aurelianus^p:

F 2

to.

^m De Affection. cap. 8. Charter. Tom. VII. p. 629.
ⁿ Caus. et Sign. Morb. Diuturn. lib. ii. cap. 12. p. 67.
^p Morb. Chronic. lib. v. cap. 2. p. 559,

ⁿ De
^o Ibid.

to which he subjoins, “ Likewise in the beginning, “ as it often happens, there seems to be no difference, “ with regard to size, between the sound and affected “ parts, nor any thing like tumour; but afterwards a “ swelling of the part, with redness, appears; which “ often gives a thorough relief to all the parts below.” Lucian^a has marked out this too with great accuracy: for when the physician inquires of Ocypus the cause of his pain; and he again, willing to conceal his disease, tells him, that it must have been a blow upon his foot, though in fact he had gone very well to bed; the physician, who very well knew that in the beginning of a paroxysm nothing besides pain ever discovered itself, replies,

*Cur non adest gravis inflammatio
Ipso in loco, nec humidum fomentum habes?*

Why was there not a grievous inflammation,
Or, to the parts applied, a fomentation?

For in places of exercise there were always physicians at hand, “ because wounds, contusions, violent “ strains, and luxations, were there frequently happening;” as appears from a passage in Galen^c formerly quoted on another occasion at §. 164. For, in the palæstra, his clavicle had been separated from the acromion, and the master (*παιδογυμνασις*) taking it for a luxation of the humerus, made a proper extension, and endeavoured to reduce it; and Galen affirms, he went very dexterously about this operation. From this it appears, that, in such places of exercise, there were persons always ready at hand, upon any accidental hurt, to give their assistance: the physician therefore might ask Ocypus, very properly, why he had no fomentation administered, seeing it was in the place of exercise he pretended to receive the hurt.

The ancients, observing that the gout attacked suddenly, that it seized the extreme parts, that the veins became varicous, and that the pain was extremely violent,

^a Tom. III. p. 669.

^c Mercurial. de Arte Gymnastic. lib. i.

cap. 12. p. 95. ^b Commentar. I. in Hippocrat. de Articulis. Charter. Tom. XII. p. 322.

violent, thought that the morbid matter was derived from some other place to the part affected; and this derivation they called a *defluxion* or *catarrh*, which they believed to be in general the cause of all disorders in the joints. So Aëtius says^t, “The gouty and
 “arthritic disorders are, in their nature, of the same
 “species. The gout, however, differs not, in general,
 “from the arthritic distemper, but only in regard
 “to the part affected; for in both there is a debility
 “of the joints, accompanied with a defluxion of humours.” What confirmed them the more in this opinion was, they observed the morbid matter, at a certain distance of time, accumulate, and then discharge itself at the same places as formerly: besides, they saw that crudities, occasioned by errors in diet, cherished and helped to bring on the distemper; and, on the contrary, that it was cured, or prevented, by a soberer and more regular way of living: they considered, at the same time, that the paroxysms of this disease were greatly accelerated by “unusual fatigue in
 “walking fast, too long continuance of a standing
 “posture, obstruction of any ordinary evacuation, or
 “laying aside too suddenly an accustomed exercise^u.” to all which causes they ascribed that debility of the joints, which rendered these parts fitter to receive, and of course to determine the morbid matter to discharge itself upon them.

Helmont^w, who on all occasions shews himself a declared enemy to the antients, explodes this opinion, and endeavours to overturn all this whole story of a catarrh. He first lays it down as a certain principle, what we have already mentioned, §. 1255. “that the
 “gout, whether proceeding from a hereditary taint,
 “or contracted by any error in the way of living, is
 “always uniform, and of the same species, alike in
 “every circumstance:” then adds, “That at least an
 “hereditary gout cannot be derived from a catarrh,
 “since it must then have remained unobserved in the body for thirty years together:” Whence he concludes,

F 3.

“that

^t Sermon. XII. cap. 6. p. 308.^u Sermon. XII. cap. 71^w In capitulo: “Volup. vivent. morb.” p. 31. et seq.

“ that seeing the hereditary kind was not derived
 “ from a catarrh, any other kind, therefore, as being
 “ of the same species, could not; since, in things of
 “ the same species, the original essential principles
 “ were the same.” And forasmuch as the pains of
 the gout, even the most severe, happen where no tumour appears, the swelling never appearing before the pain, but always after; for that reason, he positively denies the defluxion of the humours, or the swelling, to be in any way the cause of this disorder. He then proceeds to censure the practice of all the physicians in general in regard to this distemper.

But surely, had Helmont examined the writings of the ancient physicians with a little more calmness, I am apt to think he would not have insulted, with so much acrimony, opinions which took not their rise from the roving of unbridled fancy, but from careful and accurate observation into the nature of diseases. Here, perhaps, it may not be improper briefly to consider the circumstances that attend a *catarrh*, properly so called.

For the most part, it begins with a sense of heaviness, and sometimes an obtuse pain in the head, especially about the forehead. The eyes pour out abundance of tears, and a sneezing comes on: soon after, the inner membranes of the nostrils begin to swell so as to hinder the breathing by the nose, and therefore the patient is forced to sleep with his mouth open: then succeeds a plentiful distillation of a thin, acrid, saltish lymph, that excoriates the inside of the nostrils and upper lip; which flows in such abundance, that a person, who at other times has seldom occasion to wipe his nose, shall very soon wet several handkerchiefs: a troublesome cough, too, soon follows, nay, sometimes accompanies it from the first, which brings nothing up besides a thin liquor, like that which distils from the nostrils: the consequence of this is, a very disagreeable pain at the lower part of the breast. By keeping in a warm room, and using a mild diet, with emollient softening remedies, the humour, formerly sharp and thin, becomes milder, and of a thicker consistence; that which drills from the nose, grows
 thick.

thick and yellow, like well-digested pus, and what the patient spits up is like the same. By degrees, the tumified membranes of the nostrils subside, the people recover, and usually find themselves in better health than before the catarrh. A sluggishness and obtuse pain over all the joints commonly accompany the catarrh, and the whole body feels unusually heavy. Do not all these symptoms plainly shew that the disease, taking its rise at the head, gradually descends to the inferior parts? The ancients then were not so much in the wrong when they made use of the term *defluxion*.

Moreover, the *œsophagus*, stomach, and intestines, are all covered internally with a membrane that separates a *mucus*: therefore, as the disorder goes downwards, these parts are affected in like manner: hence vomiting of phlegm, mucous stools, and genuine mucous diarrhœas, not only in the younger kind of patients, who commonly swallow their catarrhus spittle, but in grown people likewise, as we have already mentioned, (§. 719.) Nay, it seems very probable, that a uterine *fluor albus* of the milder kind, that does not spring from any ulcerous disposition of the uterus, may chiefly be owing to some such cause. Charleton^x calls a *fluor albus* the *rheumatism of the uterus*; and remarks, that sometimes “it exactly resembles the “*mucus* of the nose in thickness of consistence and toughness:” and, a little after, when recounting the causes of the uterine *fluor albus*, he says^y, “But the “causes of this *atonias*, indisposition, or relaxation “of the uterus, are various; both the antecedent and “immediate may depend, for instance, upon a vitious “temperament of the air with regard to cold or humidity, whether arising from the place, situation, “state of the weather, or season of the year.” Now it is well known, that a too cold or too humid disposition of the air is highly favourable to the producing catarrhs. In a sharp and clear frost there is hardly a person at church to be heard coughing; but, soon as a thaw comes, and the air is very humid, the cough becomes universal. Hippocrates, in treating of the *fluor*

^x De catamen. et rheumatismo uteri, p. 156.

^y Ibid. p. 173.

fluor albus, appears to have entertained some such notion: for, speaking of the uterus being filled with pituitous humours, he says, *You are to ask the patient, whether or not the matter be sharp and painful: for matter, that flows to excess, smarts and exulcerates; but if it does not smart, then you may pronounce it to come from the brain*^z. Now we know the ancients believed catarrhs to be derived from the brain, which they took to be of a cold nature, and noways sanguineous. And a little after, speaking of the inner surface of the sockets of the joints being covered with pituitous *mucus* as a cause of abortion, he says, *You shall know it by this mark: a thick soft mucus flows down, that has no acrimony*^a.

It is well known that all the cavities and protuberances of the joints are continually anointed with a soft oily *mucus*, which is partly secreted from the glands within the joints, and partly from the whole internal surface of the capsular ligament that surrounds the articulations: if the same change then happens to these parts as to the membranes that cover the nostrils, fauces, and lungs, very troublesome disorders must be the consequence; such as pains, swellings, &c. and indeed from the very same causes. In the spring and autumn, catarrhs and *coryza* are very frequent, the weather at these times being much more variable; at these times too, diseases of the joints prevail. Any one, who, being very warm, exposes his body to a sharp cold air imprudently, will find a catarrh soon follow: hence it is called in general a *cold*. But there are instances of persons, who, after the most painful sufferings, have lost the use of their limbs entirely, and all from the very same causes: such was that of Alexander the Great, mentioned already, (§. 118.) who, whilst his body was very hot, threw himself into a cold river, and was immediately seized with a shivering and stiffness in every joint.

If.

^z Interrogare igitur eam oportet, num quod defluit mordeat, atque exulceret; atque si non mordeat, a cerebro defluere asserito. *De Natura Muliebri, cap. 10. Charter. Tom. VII. p. 686.*

^a Hoc autem modo noveris: humida sit, et mucosum glutinosumque defluit, neque mordet. *De Natura Muliebri, cap. 17. p. 689.*

If all these things then are duly considered, I believe it will appear, that Helmont had little reason to be so very outrageous against the ancient physicians, and to give their schools of physic the nick-name of *catarrhus*, because they were so fond of the notion of a catarrh. That the morbid matter, existent, and gradually accumulated, some time perhaps lying inactive, but now put in motion, sooner or later deposits itself at the joints, and so produces the gout, appears pretty plain from the symptoms of the injured functions mentioned at §. 1257. but since the disease, for the most part, falls upon the joints of the lower extremity, it may therefore be said, very justly, to descend.

Hath Helmont himself given a better account of this affair? He doubtless allows, that the gouty matter descends from the præcordia: but let us hear him in his own odd, obscure manner of expression. *Itaque podagra est character morbidus, seminaliter in spiritu vitæ insertus, qui suæ maturitatis terminis fructum acidum fermentalem gignit, spermaticis partibus consermentabilem. Non existit ergo podagra in cruore, multoque minus in excrementis. Verum podagræ primum agitantur in præcordiis, et tam internas potuum atque ciborum, quam externas aeris vicissitudines sentiunt; imo et sæpe has futuras præagiunt. Quare patiuntur febriles motus primum circa officinam spiritus vitalis, ac quidem paroxysmi initiis. Etenim primi motus e præcordiis ascendunt, sedem animæ sensitivæ adoriuntur; conceptus namque in præcordiis character Lunæ atque Mercurii typus explicat, atque deinde in corde perficitur. Formatus autem, sive maturatus, character spiritum ibidem febrilem induit, quatenus inficit. Qui simul atque acorem symboli vitæ, sive fermentalem, concepit, motu febrili abigitur squalens, et ad loca destinata (crudi videlicet spermatis in synovia articulorum) febriliter defertur. Spiritus enim sic infectus, et non humor (quod notandum) synoviam in se transparens, eum aciditate fermenti coagulat in grumum opacum: adeo ut præ ponticitatis conceptæ gradu, calores, dolores, tumoresque, podagræ distinguuntur. Laticem vero advocari doloris buccina, et per venas dimitti,*
ad

ad eluendum, certum est, in scholis confirmasse defluxionem errores, ^b &c. “The gout is therefore a morbid character or disposition implanted in the vital spirit, which produces a fermentable acid as the fruit of its maturity, and easily fermentable with the spermatic parts of the body: the gout, therefore, by no means resides in the red blood, and far less in the excrementitious fluids; for gouty persons feel all the commotions first about the præcordia, are greatly affected with what they eat or drink, as well as by the changes of weather, which they can even foretel to a nicety before they come. Wherefore they always at first, and at the beginning of every paroxysm, feel a considerable degree of feverish commotion about the kitchen or laboratory of the vital spirit: but the first commotions ascend from the præcordia, and attack the seat of the sensitive spirit; for the character being conceived in the præcordia, resembles Luna and Mercury, and is afterwards completely ripened in the heart: thus formed and ripened, it displays a restless, feverish spirit, as far as it exerts its influence, which, as soon as it has conceived the sharp fermentable mark of vigour and life, is thrown out like filth, and, with a febrile commotion, carried down to its place of destination, viz. the crude spermatic matter in the synovia of the joints. For the spirit thus charged (and not the humour, observe) that gives the synovia its transparency, by its fermentable acid coagulates the synovia into an opaque, grumous substance: so that the heat, pain, and swelling of the gout, may be estimated from the degree and nature of this obstructing matter. But that there is a fountain of liquid, called forth by the trumpet of pain, and sent down here by the veins to cleanse it away, seems to be pretty evident, even from the erroneous opinions of the schools concerning defluxion.”

I thought it not improper to introduce here this quotation, though somewhat long, from Helmont, in order to shew how many words, and these abundantly ob-

^b In capitulo: “*Volupe viventium morb.*” p. 315. n^o 8.

obscure, he has taken to say nothing but what the ancients themselves have said in a far shorter and plainer manner, *viz.* that the cause of the gout lurks and lies quiet in the body, till, being roused and set in action, it is at last deposited on the joints. He calls it a latent morbidic *spirit*, and not a *humour*; but the ancients have said, that the morbidic matter is pent up in the minute vessels through which nothing besides the finest liquids can pass, as under the following aphorism will be still farther demonstrated. Helmont says, “there is a source of liquid called forth by the sound of pain’s trumpet;” the ancients, “that the humours flow to the part affected.”

How many times do we observe, in diseases, a something, altogether unknown but by its effects upon the body, disturb the whole frame, and convert the humours, that were before sound, into its own peculiar nature? These humours, thus changed, constitute the *morbid matter*, so called by physicians; and this morbid matter has often the power of propagating that very disease by contagion. In dysenteries, the putrid miasma is received by any person or by-stander near the patient that has it; and, though inconceivably small and unperceivable, it is yet sufficient to convert all the humours of the healthiest person into so much dysenteric taint. Let the finest thread, charged with variolous matter, be applied to the slightest wound of the skin, the received infection lies quiet for several days, then raises a fever, disorders the whole body, and converts the wholesome humours so much into its own nature, that sometimes it spreads over all the surface of the body a numerous quantity of pustules all filled with infectious matter. May we not then, in the same manner, conceive how the gouty matter may, for a great length of time, lie quiet in the body; till at last, rendered active, it is deposited on certain parts; and then, converting the humours to its own nature, dispose them to produce the like disease by infection? Thus it may appear, as well as from what hath been said at §. 1255. that the gout is not altogether free from suspicions of contagion.

Having

Having then dispatched these, let us go on to consider the other particulars which happen during a paroxysm of this distemper,

When a gentle moisture appears upon the part affected, then begins the swelling, and the pain is considerably abated. “The next day, or perhaps for two
“ or three days more, if the gouty matter is redundant, the part affected will be somewhat pained,
“ and the pain increase towards evening, and remit
“ about break of day^c :” and the patient, if it is only the first or second fit of the distemper, recovers commonly very soon.

But when the disease is of longer standing, “In
“ a few days it seizes the other foot in the same manner; and if the pain be violent in this, and that
“ which was first seized be quite easy, the weakness
“ thereof soon vanishes, and it becomes strong and
“ healthy, as if it had never been indisposed^d :” It plays the same tragedy over; and sometimes, when the matter is very redundant, attacks both feet at once; and thus one fit is made up of several accessions of pain, till such time as the morbid matter is entirely dissipated. “For these paroxysms, “ which engross
“ the attention of indiscreet and unthinking persons,
“ are no more in effect than the succession and order
“ of symptoms resulting from that method which nature ordinarily employs to expel the morbid matter^e.”

But this morbid matter is quicker or slower in its expulsion, in proportion to the quantity accumulated, and degree of strength in the patient to throw it off. “In strong robust people, and those who are seldom
“ attacked, the disease is over in fourteen days^f :” this Lucian^g sets forth with great skill, where he introduces one in the gout as yet ignorant how far he was (*Μυστὴ τῆς ἀνικνύτη θεας*) initiated in the mysteries of this powerful goddess; and, leaning on his staff, goes out of doors to bask in the sunshine.

Nam

^c Swan's edit, p. 465.
^f Ibid. 466.

^d Ibid. p. 456.
^g Tom. III. p. 648.

^e Ibid. p. 487.

*Nam decima hæc supra quintam lux, ni fallor, est,
Ex quo tenebris conclusus, et Phæbo carens,
Cubilibus non stratis corpus macero.*

For now 'tis whole fifteen days that I, laid up
In darken'd room, have been deny'd the light
Of his enlivening beams, in ill-made bed,
Tormented fore, but nowhere taking rest.

But, “aged people, and those who have had frequent fits, do not recover within two months; but in such as are more debilitated, either with age, or the long duration of the distemper, it does not go off till summer advances, which drives it away^h.” Neither is a confirmed gout very certain in regard to its termination; the inclemency of the air, errors committed in the patient's diet and way of life, &c. all contribute to prolong it. Hence, perhaps, Hippocrates determines on a middle period, which the disease may either exceed or come short of: Thus he says, *Gouty disorders, when the inflammation is gone, terminate in forty days*ⁱ: and Galen^k, commenting on this aphorism, observes, that Hippocrates takes notice of the fortieth day as critical to such diseases, as are not altogether chronical, and yet exceed the common period of acute distempers.

But there is something yet more particular that takes place in a very inveterate kind of the gout. It was before observed, that a general paroxysm was made up of several lesser ones. And then, “as the cardinal or general fit continues longer now than it did heretofore, so likewise those particular fits, of which the general one is made up, rage a longer time; for, whereas one of these did not last above a day or two before, it now, wherever it fixes, does not go off till the fourteenth day, especially if the feet or knees be affected thereby.” Hence the patients come at last to have the distemper continued almost the whole year, two or three months of summer only excepted; and afterwards, over and above the pain they suffer,

VOL. XIII. G they

^h Swan's Sydenham, p. 466.

ⁱ Qui podagrici morbi fiunt, sedata inflammatione, intra dies quadraginta desinunt. *Apher.* 49. *sect.* vi. *Charter.* Tom. IX. p. 282.

^k Ibid.

^l Swan's Sydenham, p. 468.

they have a considerable degree of sickness, and a total want of appetite.

Moreover, Sydenham observes^m, that as long as the strength continues vigorous and lively, the pains are very strong and violent; but when the body is, through age, or the continuance of the disorder, much weakened, the pains begin to lessen, and by degrees too at every paroxysm, till at length the patient is worn out rather with sickness than pain. This alleviation of pain however, the patient, who has been long afflicted, must buy at the expence of colic pains, spontaneous lassitude, and a propensity to looseness: As long as these are present, the pain becomes more tolerable; but as soon as this last grows to any degree intense, then all the above-mentioned symptoms vanish immediately: whence Sydenham concludedⁿ, that, “in effect, pain
“in this disease is the disagreeable remedy of nature;
“and the more violent it proves, the sooner the fit
“terminates, and the longer and more perfect is the
“intermission; and so on the contrary.” Coste^o too, agreeable to this, remarks, that the longer the intermissions continue, the longer and smarter will the next approaching paroxysms be found.

There are two ways by which a fit of the gout terminates: Either the morbid matter collected about the joints transpires through the cutaneous vessels; or it is converted into what is called a gouty concretion, or chalk-stone, which generates nodous swellings in the joints, spoiling the shape and motion of the parts. These two ways of termination deserve each to be considered separately.

We took notice before, that in the beginning of the gouty pain there is no apparent change of colour in the skin; but that it is some time after that the part begins to look red and swell; at which time the pain abates considerably, and a moisture begins to appear upon the skin, the vessels being now rendered pervious that were before dried up and constricted. Hence arises a new similitude between this distemper and *cattarrhs* properly so called; for how oft do we see a severe tooth-ach follow upon any one's exposing, when warm, the

^m Ibid. p. 469.

ⁿ Ibid.

^o *Traite Pratique sur la Goute*, p. 61.

the side of the head to a stream of cold air entering by the chink of a window ! This violent pain, after lasting several hours, abates immediately when the cheek begins to swell ; and the swelling goes off in a few days, without leaving any bad symptom behind, and without suppuration ; which last is commonly the consequence in tooth-achs occasioned by a carious tooth.

So long as the gout rages with pain, the skin of the part affected is dry, and has not the least appearance of being swelled ; but when the morbid matter begins to digest, and is prepared to pass through the vessels, now relaxed and rendered more permeable, the patient feels at this time an itching, and, the cutaneous vessels being still more and more dilated, it goes off in the form of sweat. - At the same time the epidermis, that was dried up when these vessels could transmit little or nothing, drops off in scales^p. Sydenham, after observing the like effects in his own case, as well as in that of many others, held it as a fixed principle, that “ Nature in the gout had a privilege, or power, “ to exterminate the peccant matter in a way peculiar to herself, and to deposit the same at the joints, “ in order to be dissipated by means of insensible transpiration^q.” He takes care, however, to caution us against the use of strong sudorifics, recommending only the warmth of the bed-clothes, and mild diluting liquor. But Sydenham does not here mean *insensible perspiration*, strictly so called, but *sweat* ; for in another place he says, the skin grows wet. That something noxious escapes by this sweat, is evident from the very fetid smell it has in the feet and hands of gouty patients, even of those who are careful in all respects in keeping their bodies clean : nay, this sweat will mark polished silver with a yellow or blackish colour, in the same way as the steam of burning sulphur ; as appears from the testimony of a physician^r who had experienced the calamities of this distemper in every shape : and somewhere else he remarks^s, that the pain abates, and the paroxysm is entirely over,

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when

^p Medical Essays, Vol. II. p. 4243.

Colte Traite Pratique sur la Goute, p. 23.

^q De Podagra, p. 559^{of}.

^s Ibidem, p. 60.

when the part affected begins to throw out such a rank stinking liquid. Hence, from an accurate consideration of every peculiarity of this disease, he concludes^t, that the gouty virus has the same septic powers as the venereal, and may in a similar way too be transmitted to a person's offspring.

However, sulphur is not the only substance that blackens silver; since fumes of coal, and bituminous turf, have the same effect. Fishes macerated in lime-water tarnish silver dishes: and even the soft white of an egg tinges silver with the same dirty colour. Many other substances, perhaps, will have the like effect.

Hoffman^u has mentioned what is very remarkable in the case of a gentleman much subject to this distemper, "that from the colour of a metal ring he wore upon his finger, composed of mercury, copper, and tutty, he could always perceive when a paroxysm was near; for, some days before the fit came, it contracted a blackish, dirty colour, that lasted thro' the whole course of the disease, and went off gradually of itself, the former colour returning about the time of the declension of the fit."

From what has been said, then, it appears very plain, That the matter which produces the gout, for example, in the feet, is pre-existent in the body: that it may for a considerable space lie quiet, till being awakened by time, and other accidents, it is rendered so active as to disturb all the functions of the body: that being deposited at the joints, it may there excite the most excruciating torments; and, by assimilating the fluids and solids to its own nature, thus constitute what physicians call the *morbid matter*; which matter, if it happens to be entirely thrown off by the cutaneous vessels, in the form of sweat, re-establishes the patient soon in a state of perfect health. Moreover, we see, that what is thrown off in the form of sweat must possess very morbid qualities, from the relief that follows, as well as from the stinking *fætor*, and the power it has of tarnishing metals. The observation too,

^t Ibid. p. 33.
cap. 2. p. 507.

^u Medic. Rat. System. Tom. IV. parte ii. sect. 2.

too of the celebrated Hoffman proves, that the *virus* assimilates to itself the humours of our body, even before it is deposited at the usual places, seeing the patient, by the colour of the ring, could foretel a paroxysm before it came on. If therefore the whole of this morbid matter could be expelled out of the body, then there would be no more a return of the paroxysm; but when this is not to be done, our only remaining hopes are, that it may be deposited at the usual places, and there be rendered fit to pass off in the form of sweat, especially from the parts affected. At the time this change is working, there is a very violent pain, that Sydenham calls “nature’s bitter remedy,” which she employs in subduing this morbid matter; whence we expected, that the more intense the pain was, the shorter would be the continuance of the paroxysm: and, on the other hand, when old age, or a long continuance of the distemper, has much impaired the strength of the patient, the pain indeed becomes milder; but, in lieu thereof, he suffers a troublesome sickness, and remains a longer time under the paroxysms, till at length he is hardly ever free from the distemper.

How many and how great are the mischiefs to be apprehended, when this gouty matter is any way hindered from being deposited at the usual places, shall be afterwards considered at §. 1273. But when, by the salutary effort of nature, it is properly deposited at the joints, it has yet a farther change to undergo before it can be entirely dissipated. The attendant feverishness, rest, and the warmth of the bed, are of particular efficacy in subduing this morbid matter: and notwithstanding moderate exercise hath always been recommended in this distemper, even by Celsus himself^w, (though he gives this caution, *nisi cum dolor increvit, sub quo quies optima*; “unless the pain increases, for “in that case rest is better;”) yet nobody, I believe, will persuade a person in the gout, racked with violent pain, to increase his torment by moving the part affected. And indeed Sydenham remarks^x, “And, in effect, it is well for the patient, that there is no

G 3

“greater

^w Lib. i. cap. 9. p. 32.^x Swan’s edit. p. 593.

“ great need of motion, or exercise, as long as the
 “ pain continues so severe that he cannot bear it;
 “ his life being secured by the pain, which is the
 “ sharpest remedy of nature.” But in the cases where
 the distemper is become inveterate, and the patients
 are more afflicted with sickness than violent pain; such
 he admonishes to take exercise in whatever way they
 can, as in walking, riding, or going in a carriage:
 but he holds it particularly hazardous, “ if there
 “ should be a tendency to fainting, gripes in the belly,
 “ diarrhœa, or any symptoms of the like nature.”

He therefore recommends motion and exercise,
 more particularly in a fine, pure, country air, not on-
 ly during the intervals between the fits, but likewise
 whilst there is yet some little remains of pain about
 the parts: “ For though the patient may think himself
 “ utterly unable to bear to be carried into a coach in
 “ the beginning of the fit, and much more so to en-
 “ dure the motion of it; yet upon trial he will soon
 “ find himself more easy from such a motion, than he
 “ is at home in his chair.” But besides, this advan-
 tage he hoped would arise from it, namely, that the
 patient, fatigued with the motion, would have a bet-
 ter chance of sleeping: yet, what he principally looked
 for was, that the motion would promote the deposi-
 tion of the morbid matter, and prevent the remains
 from generating gouty tumours in the joints or parts
 adjacent: and hence, even before the paroxysm was
 entirely over, he ordered the patients to get into a
 chariot; “ seeing the same wealth that supplied that
 “ luxury from whence the distemper sprang, gave
 “ them also the means of supporting easily the ex-
 “ pences of a carriage.”

What made him the more confident of so great a
 power and efficacy in motion, was because he had ex-
 perience in himself, “ that not only the generation
 “ of these concretions may be prevented by daily and
 “ long-continued exercise, which duly distributes the
 “ gouty humours throughout the whole body, that o-
 “ therwise readily attacks a particular part; but it also
 “ dissolves.

“ dissolves old and indurated concretions, provided
 “ they be not come to such a degree, as to change
 “ the external skin into their substance.”

Lucian^a, who indeed gives us a very accurate history of this distemper, brings in a chorus of gouty people, all leaning on staves, and crawling along to pay their devotions to the goddess Podagra, who is herself described as walking with a crutch^b. And thus a newly-initiated votary says, that his mind and wishes were indeed ready to guide and forward his steps out of doors; but that his lazy inactive body refused obedience to his earnest desire: however he appeals to his own soul;

Probe, qui noverat.

*Podager pauper, ambulare si velit;
 Nec possit, esse eum ponendum in mortuis.*

Which knew full well, that the poor gouty wight,
 That really cannot, but yet fain would walk,
 Does but make up the number of the dead.”

The gouty people, nevertheless, continue on their walking, tho’ with much uneasiness, in hopes of obtaining

—— *Dolori finem celerem,*

His temporibus vernis;——

A speedy end to all their pain,
 While yet the vernal suns remain.

And now the goddess Podagra, in regard that her trusty messenger had performed a journey of no less than two furlongs in the space of five days, grants him, as a reward for his diligence, that for three whole years from thence he should feel his pains very easy^c. Celsus^d too very earnestly insists on exercise: “ But it
 “ is very necessary, that those who are troubled with
 “ nervous pains, such as happen either in the gout
 “ of the feet or hands, should give the parts affected
 “ as much exercise as possible, and expose them freely
 “ on all occasions both to fatigue and cold.”

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^a Vol. III. p. 648, 649.

^b Ibid. p. 652.

^c Ibid. p. 657, 659.

^d Lib. i. cap. 9, p. 39.

I have myself seen an instance of a dancing-master, who, twice a year, was sure of having a very severe attack from this distemper. and yet for twenty years and more his joints kept always free from stiffness: for, as he had a numerous family to provide for, he took care, the moment he perceived the least remission of pain, to get out of bed, and walk as much as possibly he could; and by continuing this effort every day, the fit went off much sooner than usual. Such efforts of courage however we can hardly expect from those who have been bred up in magnificence, and accustomed to all the delicacies of a luxurious life.

Moreover, what physicians have always been greatly afraid of, is, lest the gouty matter, not being immediately thrown out, should be converted into chalky or stony concretions.

Which tears the vessels and ligaments of the joints, and deprives them of their figure, motion, and use.] When this disease happens to be of a very long standing, Sydenham^c observes, “ at length it forms stony “ concretions in the ligaments of the joints, which “ destroying both the scarf-skin and the skin of the “ joints, stones not unlike chalk, or crabs eyes, come “ in sight, and may be picked out with a needle. “ Sometimes the morbid matter is thrown upon the “ elbows, and occasions a whitish swelling, almost as “ large as an egg, which becomes gradually inflamed “ and red.” For the skin, stretched insensibly by the collected matter, is inflamed, bursts open at last, and voids a substance very much resembling chalk. In a person about forty years old, who had always lived a chaste and regular life, and had bore the severest pains with most incredible patience, I saw all the joints of his body beset with these tophi or chalky concretions, though he had been only seven years acquainted with the disease. The instances, however, are very rare, where any one suffers at this terrible rate so early, especially if they keep to any degree of regularity; which this worthy man always did, being of the religious order of Franciscans.

Syden-

Sydenham^f by no means took this chalky or calcareous matter to be the tartar of the blood transmitted to the joints; but says, “ When a large quantity of indigested gouty matter falls upon some of the joints, and occasions a lasting swelling of the neighbouring parts, it happens at length, partly from their assimilating property being destroyed, and partly from the obstruction caused therein by this sluggish humour, that this matter is generated, which is changed into this kind of substance by the heat and pain of the joint, and increases every day, converting the skin and flesh of the joints into its own nature.”

From whence it appears, that Sydenham's opinion in short was this, that the gouty matter, being collected in great abundance about the joint, when the finer part was dissipated, hardened into these chalky concretions. The same opinion is espoused by Coste^g; and the celebrated Mead^h seems, in like manner, to think that there is a gradual accumulation of the chalky matter: “ For when the swelling subsides, part of the humour, which could not find a passage by the pores of the skin, (and a very little portion indeed exhales in this way), is taken up by the veins and lymphatic vessels, while the grosser parts stick in the membranes, and, being accumulated by every return of the paroxysm, concrete sometimes into a substance like chalk, filling up and greatly hurting the whole articulation.” And yet we have already observed, that a remarkably large quantity of gouty matter in fact does really pass off from the part affected along with that profuse fetid sweat; besides, the gradual accumulation of the chalky matter does not seem easily to correspond with some particular observations in this disease, to be mentioned afterwards.

Hoffmanⁱ took this chalky matter to be a tartareous concretion, and endeavoured to support his opinion principally from these observations: That persons

^f Ibid. p. 498. ^g Traite Pratique sur la Gout, p. 23. ^h Monita et Precepta Medica, p. 198, 199. ⁱ Medic. Rat. System. Tom. IV. par. c ii sect. 2. cap. 2. p. 506, et seq.

sons labouring under the gout were often at the same time troubled with the stone; that this chalky matter appeared evidently to be of the same nature with tartareous salt, composed of an acid and a good deal of earth; and that drinking too much of wines, in which this tartar abounds, contributed more frequently than any thing to produce this distemper, &c. Others, from hearing the sick complain of a live coal, as it were, burning the part affected, thought that the ligaments and bones being burnt up by the violence of the disease, were thus reduced to a chalky substance. Some again have thought; that concretions of this sort might take their rise from hardened catarrhus mucus; and many different conjectures of the like sort have been thrown out by different people.

But the opinions of those who have, with particular accuracy, examined into the nature of this gouty chalk, of all others best deserve our attention. The celebrated Hales^k, upon observing that the *calculus humanus* contained a very considerable quantity of unelastic air, and finding the same thing obtain in tartar, calls the former by the name of an *animal tartar*; and says he does not doubt but the same takes place in gouty concretions, which he reckons to be of a similar nature. The excellent Dr. Whyte^l, when he was making experiments to prove the great utility of lime-water in diseases of the stone, thought it might be worth while to try its efficacy upon gouty concretions, especially as they were supposed by the greater part of physicians to be very much a-kin to the other, as both (according to what has been asserted by some) yield, when examined chemically, pretty much the same principles. He infused therefore, in some lime-water, a bit of gouty chalk-stone; which, being specifically lighter, swimm'd a-top; but, after emitting several bubbles of air, fell soon to the bottom, and in a day or two after was found of a soft consistence like butter. He then infused another bit of the same chalk-stone in pure water, and the same effects followed precisely:

^k Vegetable Staticks, p. 192.
part ii. p. 714.

^l Medical Essays, Vol. V.

cisely: whence he concludes, that nothing certain could be drawn from these experiments, to prove that lime-water would have the same power on concretions of this kind, as it had on the calculus humanus.

For my own part, I never found a gouty chalk-stone to cohere so firmly as the calculus humanus: what I have seen were always friable, and went to pieces on the slightest pressure. I have now, whilst I write this commentary, made trial on a chalk-stone which has been twenty years in my possession, and which at present has the same degree of brittleness as it had when first extracted from the gouty tumour. Nor are we to be surprised at finding gouty people afflicted, at the same time, with nephritic and calculous disorders, seeing they for a long time together are fixed down immoveable to their beds: and the like happens in many other cases, where a tedious confinement to the bed, in one certain posture, is unavoidable, as in paralytic disorders, fractures of the thigh, &c. where the stone is often observed to be generated in the same manner. Perhaps another reason, and not an improbable one, may be found, to account better for the production of these gouty chalk-stones.

The celebrated Haller^m, with an industry hardly to be equalled, applied himself to examine, in what manner the bones were first formed in young animals. He observes, then, that the whole body of the animal about to form, and consequently the bones, resemble a soft jelly; which jelly is first turned into a cartilage, and this last afterwards converted into a bone. The conversion of the jelly into a cartilage is quick and easy, as requiring only a very little more solidity; but the means by which a cartilage is converted into bone are not so obvious, and require a longer process. A cartilage, when not very thick, is pellucid. The first signs of its assuming a bony nature are opacity, and a yellowish colour; and at the same time, a fibrous texture begins to appear: this change may be perceived on the eighth day of incubation: On the tenth, the first rudiments of the blood are to be seen,

seen, and to be distinguished by a yellowish hue : on the eleventh day, the redness is to be observed ; and, on the same day, that part of the cartilage, which began to be opaque and yellow on the eighth, looks now of a reddish colour ; for the arteries, being more dilated, are now able to transmit some red molecules of blood ; and, at the very same time, there is a bony hardness to be perceived in the same part of the cartilage : the like obtains in calluses of fractures, before they acquire the last degree of hardness. The arteries, now enlarging more and more, are pressing upon the parts adjacent ; and, being dilated by the *impetus* of the blood within, are rendered fitter to transmit some grosser particles, and those especially of the earthy kind ; the interposition of which particles, giving a greater degree of solidity and brittleness to the cartilage, lessens its flexibility ; and thus, from being a flexible elastic substance, it becomes a hard and brittle bone. If this earth be mixed with the acid of vinegar, a neutral salt will be produced, glittering with shining crystals, which has the power of mollifying bones, and resolving them back into a cartilaginous state.

These earthy particles dissolve entirely in the acid ; for my worthy friend and colleague, Dr. Storck, at a conversation with him on this subject, diluted some aqua fortis with a little common water, in which he macerated a few chicken-bones, which were all soon reduced to a flexible and elastic state : then, afterwards, upon pouring in some oil of tartar per deliquium, there fell to the bottom of the vessel a powder, which, when well washed, had every quality of genuine earth. After this, in a quantity of diluted aqua fortis, he macerated an entire skull, which had lain many years in a burying place ; and the whole was rendered flexible and elastic.

It seems to be this terrestrial part solely to which madder-root imparts a strong red colourⁿ : and therefore madder has no effect upon cartilages, until they ossify ; nor even upon the calluses of fractures, until they have acquired the hardness of bones.

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ⁿ Ibid. p. 9. et seq.

A cartilage then differs from a bone in not having this terrestrial part; for, when this part is taken away from a bone by maceration in acids, the cartilage comes forth entire, as if it had only hid itself within the solid bone^o. Again, when the earthy part of a bone is tinged by feeding the animal with madder root, let the bone itself be macerated in acid, it quickly loses all the colour, and there remains a cartilage without the least tinge whatsoever^p. Herissant^q has observed, that gouty concretions entirely dissolve in nitrous acid, without leaving a vestige of either cartilage or membrane behind. The same thing was observed to happen in an old hen, which had concretions collected about the joints of her feet; for after feeding her with madder root, they were all dyed red, and dissolved entirely in diluted acids^r. Hence we have an evident proof, that as only the earthy parts of bones are tinged with madder root, and as the gouty concretions consist entirely of this earthy part, of consequence they must have a much deeper tinge than the bones themselves.

If, then, it be considered, how continually the solid parts of our bodies are impaired by the ordinary actions of a healthy state of life; we shall see how necessary it is, for the preservation of health, that there be a continual repair of what has been thus worn away. From several experiments made by the celebrated Du Hamel^s, and confirmed by others, it appears, that, when madder root is mixed up with the food of any animal, the bones are tinged with a red colour. If the animal be afterwards fed as usual, without the mixture of madder root, then that part of the bone which grew during this nutriment shall not in the least degree be tinged; but let the madder again be added to the food, it soon acquires the same colour as the rest had done before. Thus it was that Du Hamel, on dividing transversely the femur of a pig he had fed in this way, observed the bone variegated with red and white circles; and what particularly ought to be

VOL. XIII.

H

remarked,

^o Fourgeroux mem. sur les os, p. 5. ^p Ibid. p. 23. ^q Ibid. p. 22.

^r Ibid. p. 96, 97. ^s Academ. de science, l'an. 1742. Mem. p. 497.

remarked, by only a month's feeding of the animal with madder root, a very considerable part of the thickness of the bones was coloured red. Now, as it was shewn before, that only the earthy parts of the bones could be tinged with the madder root; it is plain, that, in a month's time, a considerable quantity of earth must have been fresh applied to the bones, partly to repair that which had been worn away, and partly to serve for their growth and enlargement; the experiments being all tried on young animals. Moreover, from the same experiments it appeared, that, in six weeks time, upon letting the animal feed on its ordinary aliment without the madder, the red colour went entirely off^t; which certainly must be owing to fresh uncoloured matter supplying the place of that which had been formerly tinged, but now thrown out of the body.

It is therefore natural to suppose, that this earthy substance is continually separating from the bones, and expelled from the body by the common emunctories; and that other substances of a similar nature are brought by the vessels to these parts, to make good the deficiency in older animals, and to promote the growth of younger. If then the vessels should be so changed by frequent attacks of the gout, and the contexture of the bones so destroyed, that what was destined to repair the loss cannot arrive at the proper place, it is not surprising that it should be deposited in the adjacent parts, and create gouty swellings productive of various effects, and different kinds of lameness, according to the part in which it is deposited. For it appears from what has been already said, that this chalky matter of the gout is possessed of the same properties as are found in that earthy part of bones, and which, added to a cartilage, is the cause of its ossification.

When this matter therefore, which is necessary to repair the lost substance of the bones, happens to be collected in the cavity of a joint, an almost incurable ankylosis is the consequence. Should it fix upon the

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^t Haller sur la formation des os, p. 17.

ligaments, it takes away their flexibility, and thus deprives all the parts of their motion and use, besides deforming the shape of the joints in a very extraordinary way: “ For sometimes, distorting one or more
 “ fingers, it makes them resemble a bundle of par-
 “ nip-roots, depriving them insensibly of all motion^u.” Hence, when the gouty chorus chant the praises of the goddess Podagra, they give her the epithet of περιχονδύλο-
 παγοριλα, *callum articulis inducere amans*, “ as delight-
 “ ing to strike the joints with stiffness.” The emperor Galba was so badly afflicted, “ his hands and
 “ feet being so very much distorted, that he neither
 “ could suffer a shoe, nor was in the least able to open,
 “ or even hold, a little book^w.” Whence it is no wonder, that, being in so miserable a condition with this distemper, he should cry out, “ When I stand in
 “ need of eating, I have no hands; when walking is
 “ necessary, I have no feet: but when I am to be tor-
 “ mented, then feet and hands are all ready.” For at length, “ the afflicted patient lives only to be mi-
 “ serable, without enjoying even the smallest pleasure
 “ of life^x.”

This earthy matter, which seems to constitute the gouty chalk-stone, how easily soever it may acquire a solid form, is yet originally conveyed to the bones along with the liquids by means of the vessels: nay, it issues out sometimes in the form of a liquid from gouty tumours not as yet indurated, which I myself remember sometimes to have seen; and which likewise is farther confirmed by that surprising case, already mentioned at §. 1255. of the person, who, in a fit of this distemper, after vomiting up a quantity of sharp acid, found an immediate relief from the pain. In this very person there appeared a pretty hard tumour about the instep of the right foot, whilst there issued out from the middle of the great toe a quantity of viscid matter, like whites of eggs, mingled with a few very little bits of chalk-stone: but this evacuation happened four or five days before the regular paroxysm

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came

^u Sydenham, tractat. de podag. p. 550.
 lib. vii. p. 584.

^w Sueton. in vita,

^x Syd. tract. de podagra. p. 552.

came on, which, after continuing three or four weeks, terminated at last without the acid vomit, copious sediment in the urine, or the very fetid sweat with which the former paroxysms used to end; but then, three fingers of one hand, and two of the other, were all loaded with chalk-stones: these fingers, when exposed to the cold, were very sharply pained; and, on the contrary, when kept warm, were much easier. It was not long after this, when a great quantity of this chalky matter, for three months together, issued out of the great toe of the left foot, and particularly from that place which commonly sustains the weight of the whole body in walking: the place from whence this matter issued still continued a little open; and in the mean time the patient was seized with a smart fever, which terminated in three days by sweat and a copious sediment in the urine: to this succeeded a fit of the gout, and a very sharp pain laid hold on both feet, which lasted near a week: then arose a very unusual itching about the aforesaid open place, out of which there was squeezed by gentle pressure about an ounce or two of liquid chalky matter; and next day, upon enlarging the aperture, half a pint of bloody serum came out, mingled with pieces of chalk-stone. The wound soon after healed up, and the patient recovered very good health ^y.

Such a quantity of matter therefore, so suddenly collected in this part, does not seem to have pre-existed there, but rather to have been derived hither, from some other place of the body, by a true metastasis, the pain of the part inviting the morbid matter towards this particular place; as hath been shewn before in the history of Fevers, when we discoursed concerning a Crisis and Metastasis.

This earthy matter then flows along with the healthy humours, restoring to the bones what is perpetually worn away, and also conveying to them what is necessary for their gradual increase in younger animals. But when this same matter is changed by disease, or cannot properly be applied to the bones, then it is either depo-

deposited upon other places, or wholly thrown out of the body. Instances were given from Platerus, under the preceding aphorism, of tophous swellings being found about the ear and upon the palpebræ. Such concretions have also been found in the lungs^z, kidneys, and liver of gouty people^a: and Pechlin^b saw several young men, the most robust, and of the best habit of body, at last so miserably afflicted, “as at the age of thirty to sweat a kind of tophaceous matter.” And one or two of these died of this distemper before the fortieth year of their age: “And such was the general tendency of their humours to a chalky nature, that every evacuation, either by sweat or spittle, received a whitish cast from the abundance of this sort of matter.” A certain person, about fifty years of age or more, and otherwise healthy, had suffered at times under some slight returns of the gout; and was at the same time so very sensible of cold, that he could not bear to be without a fire in his bed-chamber even in the very middle of summer: this gentleman all at once began to make urine white as milk, which, when allowed to settle for an hour, became pellucid, and let fall a copious white sediment to the bottom of the vessel, which at first appeared like soft clay, but in an hour or two after hardened into a white chalk or plaister-lime: he continued to void such urine, without alteration, for the space of nine months; insomuch, that during the foresaid time he reckoned more than sixty pounds weight of this chalky substance had been voided^c: and what is of all the most extraordinary, upon changing his place of his abode, he made no more of this chalky urine; neither did he find any advantage or detriment as to his health from this remarkable change. Something like this we find in Baglivi, where he treats of the stone and gout^d: “Lately, at Rome, a person labouring under an arthritic disorder voided a large quantity of thick urine, which, after standing a little while, was coagulated into

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^z Liger traite de la goutte, p. 344.

^a Ibid. p. 346, 347.

^b Observ. physic. medic. lib. ii. obs. 25. p. 272.

^c Academ. de

sciences, Paris, 1747. Hist. p. 56.

^d Opera omnia prax. med.

lib. i. p. 117.

“ the consistence of a jelly; and by this means he was cured of the distemper.” In the observation foregoing he remarks, that the sediment was of such a consistence as to be cut like soap with a knife. But we also know, from other observations, that gouty tophous swellings, before they acquire their usual hardness, sometimes gather about the joints in a liquid form. Pechlinus^e mentions a boy of fourteen years of age, subject to this disorder from his earliest infancy; the joint of whose elbow he saw tumified in such a manner, “ that the coats of the tumour, in time, came to be so distended as to hang down like a little bag stuffed out with fat or glary matter; but, on opening the tumour, there came out a saltish liquid, which, when exposed to the air, immediately hardened into a white chalk.”

From what has been said, then, we may form a pretty clear idea of the nature of this gouty calx or chalk-stone: for it seems alike in all respects to that earthy matter which converts a cartilage into bone, and which, when taken away by any means from the hardest bones, brings them back to the softness of a cartilage. Many surprising disorders of the bones seem to confirm this opinion. Some we have already mentioned at §. 549. in treating of disorders of the bones, particularly the preternatural morbid softness of these parts, from the observations of the celebrated Petit. Du Verney^f gives a description of an extraordinary case, from the third volume of the *Acta Hassniensia*, of a person who, in the twenty fourth year of his age, began to complain of a pain about his heel, knees, and upper joints of the thighs, which was judged to be from the gout. In a year after, he had pains all over his body, which were so violent, that he was obliged to keep his bed almost perpetually: then the bones began to soften; nor did the pains leave him until the whole bones of his body were rendered so flexible as to bend like wax, without the least pain, into any form you pleased. But from the contraction of the muscles,

^e Observ. physico-medic. lib. ii. obs. 25. p. 272.
maladies des os, Tom. I. præf. p. 138.

^f Traité de

muscles, and their having no longer a due resistance from the bones, the length of the body was so much diminished, that the poor afflicted person, who formerly had been of a very proper size, now dwindled away till he became no bigger than a child of three years of age; yet, motion only excepted, all the other functions remained as well as ever. He lived in this condition to the thirty-second year of his age; but a month before his death the pains returned, and continued without intermission to afflict him till he expired.

It is also observed by Petit, (see §. 549.) that however soft and flexible the bones may be rendered, the cartilages always retain their natural degree of firmness. There are a good many other cases in the history of physic, which fully shew that all the bones of the body, and sometimes only part, may be entirely rendered soft; but chiefly a case related by Gagliardi^g, that deserves our particular notice.

A young lady of rank, much subject to rheumatic defluxions, after having suffered the most cruel and continued pains, had all her bones softened in such a manner, that upon examination of the corpse the bones connected to the joints of the superior and inferior extremities appeared to be composed of a kind of callous flesh; but the other bones in firmness resembled cartilages. Endeavouring to explain the reason of their being reduced to this degree of softness, he says, “Wherefore the bony fibres, when the fore-mentioned bony or plastic juice is dissolved away, can no longer retain their firmness; for this reason, Because the sole cause of their hardness being taken away, they return to their primitive state: for by nature they are originally soft and flexible; and thus must necessarily become soft, and more or less so as this concreted juice is more or less dissolved away.”

In that very surprising case described by the skilful and learned anatomist Mr Morand^h, where we have an account of a woman whose bones, before her death, were all reduced to softness, it is particularly remarkable.

^g Anat. off. p. 70. et seq.

^h Histoire de la maladie singuliere, et de l'examen du cadavre d'une femme, p. 13, 17.

able, that she had felt the pain severest in those very parts of the bones where they had lost their due degree of firmness most. At that very time too she had passed a great deal of turbid, milky urine, which deposited a plentiful sediment: this sediment, upon examination, had all the qualities of the chalky plaster, and with a considerable effervescence dissolved in distilled vinegar or in the mineral acids: whilst she had this evacuation of milky urine, her pains grew milder; and sometimes she was bedrenched with copious sweats, which stained the linen like grease mixed up with chalk. However, notwithstanding all the bones of this miserable woman were entirely softened, the cartilages remained unchanged, and retained their former whiteness, smoothness, and elasticityⁱ. The bones thus softened could indeed be drawn out by a little force to their natural form, but bended inwards again of their own accord when left to their freedom. An account of this wonderful disorder, as also an exact description of the skeleton preserved among the curiosities of the academy, drawn up by the celebrated Mr Morand the elder, is to be found in the Transactions of the Royal Academy at Paris^k. But Morand further remarks, that the bones of this skeleton did not retain all that softness they had in the recent corpse, but acquired a greater degree of hardness, especially those about the cranium.

Now the same thing was observed in the skull before mentioned, which by maceration in diluted aqua fortis had been reduced to a cartilaginous state; for even this last, when allowed to dry, acquired a greater degree of firmness.

However, that this matter, called gouty calx, or chalk-stone, when collected about the joints and their ligaments, can take away the motion of the parts, and produce the most surprising deformities, appears of itself abundantly plain, and is but too well confirmed by the melancholy examples which daily offer to our view.

ⁱ Ibid. p. 74.^k L'an. 1753. Mem. p. 541—552.

§. 1262. **F**ROM all which it appears, that the proximate cause of the gout is a vitiated state of the most minute, and consequently nervous vessels of the body; and also of that fluid which flows through the nerves.

We have already seen, in the history of the epilepsy and some other diseases, that very surprising and sudden changes may happen in the body, and many astonishing bad symptoms may be produced, from hidden causes, which physicians could never trace by the utmost acuteness of the organs of sense, and which they have so often in vain searched after in the dissection of dead bodies: whence they concluded with some reason, that the cause of all these surprising effects must lie hid within the substance of the brain, or the nerves arising from thence. Nor was it altogether without foundation that they entertained the same opinion concerning a genuine and perfect gout. When this distemper is hereditary, it lies concealed for years, and takes a proper opportunity to manifest itself. Sometimes it passes from a grandfather immediately to a grandson, whose father has never perhaps been afflicted. There is no appearance of it during the intervals between each paroxysm: and many gouty persons, after the fit leaves them, enjoy the soundest health. Notwithstanding, then, the other humours of the body may be healthy enough, yet there may something perhaps lie concealed within the brain and nerves, which, though too subtle to disturb the common animal functions, may however, when occasionally rendered active, produce this distemper. Whence, as we have already observed, Helmont thought that the gout did not reside essentially in the part affected, but only was derived there as an apple or any other fruits from their respective roots. Now that the root of the gout is implanted somewhere in the nervous system, may be proved by several arguments.

I saw a man who for two years was afflicted in this terrible manner; namely, As long as he remained sitting
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and at rest, he perceived nothing; but the moment he got up to stand with his body erect, he was seized with a giddiness, and fell down. Many remedies were prescribed by the ablest physicians; without the least benefit; till at last a sudden fit of the gout, which he never had suffered before, freed him from this dangerous vertigo.

I had the care of another person who was seized with a severe pain in the abdomen, with a delirium, and strong tremor over his whole body, and then fell down epileptic. In the space of a month, he had three severe fits of an epilepsy; a sharp fit of the gout at last seized his great toe, by which he was entirely cured, and had afterwards a regular return of the gout twice a-year. Agreeable to this, Hippocrates has remarked, that the epilepsy is cured by another distemper near a-kin to the gout; for he says, *The great disease, attended with an extreme degree of violence, is in a critical manner cured by the sciatica*¹.

Besides, we took notice before, at §. 1258. how the gout has all at once been cured by the strong emotions of terror, or the exquisite transports of unexpected joy; the *sensorium commune*, and nerves, being all forcibly agitated by these quick and powerful affections of the mind. Helmont remarks, as we have already mentioned, (§. 1257.) that the first presages of an approaching fit are commonly perceived about the præcordia; now it is in this very place that the passions of the soul raise the greatest commotion; and in like manner any gross, filthy humours, lodged about these parts, affect the whole powers of sensation in a most surprising way, as we have shewn in several instances at §. 701. when we treated of a Febrile Delirium. Hippocrates and Aretæus both held the seat of the gout to be in the most minute little veins, and likewise in the nerves, as hath been said in a preceding paragraph: nay, Aretæus^m, when discoursing of this disease, says, “ But if the disorder increases so as to
“ prevail

¹ Magni morbi, in vehementia existentis, solutio coxarum dolor. *Epidemic. lib. ii. textu 5. Charter. Tom. IX. p. 187.*

^m De Caus. et Sign. Morbor. Diuturn. lib. ii. cap. 12. p. 65.

“prevail over all the parts of the body, then it affects the whole nervous system.”

These particulars being considered, we shall have good reason to believe, that the proximate cause of the gout consists in a vitiated temper of the most minute, and consequently nervous vessels in the body, or even in a depraved state of that exceeding subtil fluid which passes through or waters these vessels.

The observations of anatomists demonstrate, that the larger nerves are made up of bundles of lesser ones, which again may still be subdivided into lesser bundles; nor could the best glasses, or the most dextrous hand, ever arrive at an end of this subdivision: For no one hath as yet seen the most simple fibrilla of a nerve; but could only discover a very small bundle of little minute nerves, which can still be subdivided till it includes the utmost acuteness of sight and dexterity of hand. Now all these minute bundles are wrapped up in their proper sheath or covering, and kept moistened by a very fine liquor, which hinders their growing together: therefore all these proper coverings of the nerves must be vascular; and in the most minute of these there is certainly contained a very fine liquid, which, though it gives place, in degree of fineness, to that fluid which moves through the cavity of the minutest nerve, must however have a very great degree of subtilty. If now it be considered, that this very fine dew, or moisture, which keeps them from growing together, is again resorbed by the veins which here must be exceedingly minute, and by them conveyed into a larger order of veins, till at last it reaches to the sanguineous ones, which, as we have said before, are always turgid before a paroxysm, we may easily conceive how this resorption of the fine lymph may be obstructed, and by stagnating degenerate so as to injure the parts it was ordained to wash and moisten. Whence also we see how we are to distinguish the different kinds of gout, according as the distemper is seated, either in the very smallest vessels, or in those which are of a larger size. Hence, as we have observed before, of all the different kinds of this disease, that

that is the most cruel where no tumour appears upon the part affected.

§. 1263. **A**ND indeed this fluid may be faulty, by its acrimony, or too great a degree of viscosity; and the solids from a narrowness and rigidity of their vessels.

Many arguments prove the existence of an acrimony in the humours. For although a high degree of pain may arise from over-stretched fibres, yet the most painful gout is certainly where there appears no swelling or redness upon the part affected, and where there is hardly any, or at least a very small degree of fever. When this is the case, physicians commonly ascribe the disease to acrimony; yet the humours may be viscid at the same time, and the acrimony so entangled with this viscosity, as not to be separated but with the greatest difficulty, as we have before observed at §. 1153. in treating of the scurvy. Sydenhamⁿ, who employed all the powers of his understanding to investigate this distemper, blames acrimony. Coste held the acrimony^o of the humours, joined to a great degree of viscosity, to be the immediate cause of this disease; nay, he acknowledges a septic acrimony, which he says he has seen destroy both bones and cartilages with caries^p; and, as we mentioned before, (§. 1261.) he knew when a paroxysm was at hand, by a continued irritation of the eyes from an abundance of sharp acrid tears. Besides, the disease, *ceteris paribus*, is commonly severer in people who are in use to live on acrimonious aliments, or who indulge too freely in drinking wine; when, on the contrary, it is observed to be very much alleviated by the constant use of a milk diet.

There is nothing more certain, than that the humours of the healthiest body have a tendency to acquire a great degree of acrimony: but this acrimony, spontaneously bred in the humours, is expelled out of the body by the urinary passages, or is exhaled by the pores

ⁿ Tract. de podag. p. 559.
^p Ibid. p. 33.

^o Traite de la Goutte, p. 27.

pores of the skin; and at the same time, when there happens to be a greater quantity of acrimony produced, whether spontaneously in the body, or from the use of acrid food, a thirst generally follows, which naturally invites the patient to drink large draughts of diluting watery liquors to wash away this acrid matter, and thus expel it when diluted by the ordinary outlets of the body. But Coste has observed, (see § 1257.) that the urine, for several days before a paroxysm, comes away pale and muddy, like thick lemonade; and the longer these signs continue before an attack of the distemper, so much severer he apprehended would the approaching paroxysm be found: all which plainly shews there existed an acrimony of the humours not sufficiently thrown off by the urinary passages. And again he observed, on the other hand, that the disease went off sooner whenever the urine deposited a very copious yellow or red sediment. Hence it would seem, that the uriniferous little tubes in this case were constricted; and therefore could not easily transmit these acrimonious particles, which ought naturally to have passed this way out of the body.

What has been just now said is farther confirmed by a pretty remarkable observation. It is very well known, that turpentine taken internally, or even applied externally, gives the urine a grateful flavour, like violets; and very quickly too, as I observed this smell in the urine a few minutes after I had swallowed, for the sake of the experiment, only five grains of this native balsam. But an old lady, very ill of the gout, took every day a dram of Venice turpentine boiled along with *polium montanum*^a; and this indeed she continued constantly to take, for seventeen months, except when under a paroxysm; for then it was omitted: and yet, nothing of this violet smell could be perceived in her urine^r. It is true indeed, that turpentine loses no inconsiderable part of the flavour in decoction; but yet, as nothing at all of this passed through the kidneys, we are pretty sure it must have been accumulated and locked up within the body. For

^a Hahn histor. podagr. eminent, &c. p. 10, et seq. ^r Ibid. p. 16.

an immoderate thirst soon followed : and the turpentine odour immediately found a way to the salivary organs, whence proceeded a plentiful discharge of tough spittle, fully charged with the smell of the turpentine : And though, upon the appearance of this spitting, the turpentine was immediately discontinued ; “ yet
 “ the source one would have thought inexhaustible,
 “ or that the whole spittle had been produced from
 “ the turpentine : and no wonder ; for we had tried
 “ the effects of this celebrated remedy for so long a
 “ tract of time, that the whole mass of humours might
 “ very well be full charged with it.” But as this smell of the turpentine continued a good many days, and so became disagreeable, a remedy was contrived of oil of almonds, sugar, and the yolk of an egg, with a view to divide this turpentine-like viscosity, and render it fit to be entirely thrown out of the body : which answered to our wish ; for in a few days, by taking this medicine, the disagreeable complaint was wholly taken away.

Hence we may perceive, how that, which in healthy people easily passes off by the urinary passages, may yet for so many months be retained in a gouty constitution ; and therefore we see, that what by the laws of perfect health ought to be thrown out of the body, does not all go off by these passages. This also perhaps deserves to be considered as one cause why people in the gout are so frequently afflicted with the stone and gravel. For this reason^s Sydenham earnestly recommends drinking plentifully of thin weak liquors, and exercising the body during the intervals between the fits, to cleanse the kidneys of all that is likely to remain there, or that may any way contribute to produce stony concretions. For he advises gouty patients to be contented with eating a dinner only, and to go supperless to bed : “ but he allows them to drink as
 “ much small beer of any kind as they please, seeing
 “ people in this condition are almost all liable to have
 “ stony concretions generate in their kidneys, and
 “ therefore plentiful draughts of this sort of liquids
 “ may

^s Tractat. de podagra, p. 579.

“ may prevent such concretions, by rinsing the kidneys from all impurities, and by cooling them.”

A too great tenacity of the humours may at the same time be, with very good reason, blamed. Coste^t observes, that blood drawn from gouty people in the vigour of life, and otherwise of healthy constitutions, hath an inflammatory denseness, like that which appears in a pleurisy; only it abounds more with serum, and there is less of the red crassamentum. In the more infirm, and those who are much worn out with the long continuance of the distemper, this red part is turned almost quite black; and there is still a larger proportion of the serum, which looks greenish, and is of a very saltish taste: this blood contracts a stinking foetor, even ere it is quite cold. Du Hahn^u found blood drawn from a gouty person at first with all the marks of being good. In a year after, the same person's blood appeared thick, and covered over with a catarrhus mucus: three months after this, it seemed to be quite florid; and in six months after became tough and viscid, thus varying from better to worse at different times: but about six months before the patient's death, some blood drawn from his foot was uncommonly tough, nasty, and black, sending forth a corrupted smell. All these shew, that too great a tenacity may really be found to exist in this disease; nay, some have maintained, that the whole of the distemper entirely depends on an increased viscosity of the humours, inasmuch as to owe its rise principally to the use of such meats and drinks as abound most with viscosity^w. But this matter we have already considered in a former paragraph.

Too great a degree of rigidity in the solids hath also been blamed, which occasions a tightness and narrowness of the vessels, as we have shewn at §. 33. and consequently an increased resistance to the liquids that must pass through them.

Hence the gout more frequently invades at an advanced time of life, (§. 1255.) when the solid parts of

^t Traite sur la goutte, p. 21, 22.
p. 13, 17, 20, 25.

^u Hist. podagr. eminent.
^w Liger traite de la goutte, p. 63.

the body acquire more and more of this rigidity. Hence it is, too, that external cold, as it constricts the vessels, is so hurtful to gouty people; and frequently, as we have observed before, brings on a paroxysm. Hence people who have been long afflicted, and are miserable through the whole year almost, yet have always a tolerable share of health during the summer months. A diminution of the ordinary perspiration, and particularly a dryness of the skin between the toes, where in a sound state there used to be a plentiful discharge of stinking sweat, we have already said, were always reckoned among the certain signs of an approaching paroxysm: but when, upon a relaxation of these constricted vessels, the humours begin again to flow freely, the skin grows moist, the pains become easier, and the disorder, in the affected parts, hastens towards a crisis, as hath also been formerly observed.

§. 1264. **H**ENCE the gout first shews itself in those parts which are most distant from the brain, and which most resist motion, on account of their solidity, hardness, exercise, and the weight incumbent upon them.

This is true in the first stages of the gout; for then the feet are always first attacked. But when the disease is more advanced, and the quantity of matter is more than the articulations of the feet can receive, then other parts are also invaded, as the hands, knees, &c. or it is in a surprising manner dispersed through the whole body; especially, if these parts are so obstructed, or compressed, as not to receive the gouty matter. See §. 1259.

§. 1265. **B**UT the more immediate origin of this defect in the solids and fluids, (§. 1262, 1263.) is from an indigestion of the viscera, which does not sufficiently attenuate and assimilate

assimilate the aliments into a substance fit to supply the nerves with their proper fluid, which require the ultimate effect of the highest elaboration.

If we consider every circumstance with regard to nutrition, we shall find, that, by the necessary actions of life, our liquids are daily consumed, and the solids continually worn away: hence, were not these perpetual losses continually repaired, our bodies must in a short time go to destruction. But this is not all; for the humours, by the natural heat of the body, and their motion through the vessels, are apt to degenerate from a mild kindly disposition, and to contract a high degree of putrescent acrimony: hence, if these acrid humours, so noxious when allowed to remain in the body, are not continually thrown off, either by the pores of the skin, by urine, or by stool, and their place supplied by fresh, wholesome, lenient chyle, our bodies must in like manner fall to ruin. This evidently appears in persons who, by fasting strictly, waste away their bodies if they but abstain twenty-four hours from meat and drink; for their strength is so much impaired, that they cannot go through their ordinary fatigue; nay, very often fall into faintings, even though their bodies remain at perfect rest. In these people, the breath smells strong; and the urine, now much diminished, grows acrid, and occasions a strangury: all which inconveniencies are soon removed by taking the ordinary refreshments of proper aliment. This increased acrimony of the humours at first shews itself in the primæ viæ and larger vessels; but when the finer fluids are once affected, then follow obstinate watchfulness, epileptic convulsions, and furious fevers, which at last terminate in death*.

The aliments, however, that are newly taken down, are by no means of the same nature, as yet, with what has gone off already in waste; but must undergo a very great change by the action of the viscera and vessels, in order to put off their own nature, and to

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acquire

* H. Boerhaav. Institut. Med. sect. 757.

acquire a fit disposition to assimilate with the different parts of the body.

Physiology shews how extensive an apparatus is necessary to produce, from fresh aliment, this renovation of what has been worn away. Manducation divides, and intimately mixes the saliva, air, and food together: this the stomach receives, retains, and cherishes, blending them with its own particular humours; when, at the same time, this bowel is in a continual gentle motion from the pressure of the diaphragm and muscles of the lower belly; and is kept in a due degree of heat by the liver and spleen, which, being replete with warm blood, lie close to it on the superior and lateral parts, whilst the pancreas do the same from below: the aliments, thus changed in the stomach, pass through the pylorus in a more liquid form into the intestines: here they are mixed with both the biles, and the pancreatic juice; as also with a very fine lymph, poured out by the arteries, from every point almost of the inner surface of the intestinal canal: the thinner part is taken up by the lacteal vessels, till all that is proper be entirely absorbed, and then the rest goes off in fæces by stool: the chyle thus absorbed is still farther mixed with a lymph returning from all the parts of the body; and being diluted in this manner, and now consisting chiefly of animal liquids, it falls in drop by drop with the stream of blood passing through the axillary vein, and is conveyed to the heart; then, passing through the lungs, is received into the aorta, and so is carried along with the arterial blood through all the parts of the body.

Whilst the chyle moves along with the blood in this manner, it puts off a good deal of the original nature of the aliment, but as yet acquires not completely the assimilative qualities; for when separated by the mammary vessels, and collected in the breasts, it still retains a good share of the alimentary qualities. It appears however from the experiments of Lower, that about eight hours after the chyle has circulated along with the blood, through the viscera and vessels, it is then changed so far from its original nature, as to be fit

fit to assimilate with our humours, and sufficiently elaborated to repair whatever has been worn away.

But if one or more of these conditions requisite to a perfect assimilation be wanting, the ultimate effect will be in some measure different, and a certain degree of depravation of course must follow; especially in the very finest humours, which require the highest degree of elaboration, to enable them to pass, without impediment, through the most minute vessels in the body: and whilst these defects in the ultimate assimilation remain, a quantity of this depraved humour will always be accumulating, which, the longer it stays in the body, the more acrid it becomes, and is removed with the greater difficulty; and thus at length being deposited at the places fit to receive this matter in its present state of depravation, produces this distemper.

Hence we may see why *Ægineta*^y, in treating of this disorder, says, the humour preternaturally accumulated, and a debility of the parts, are the immediate causes of the disease: “ For when the nutritive
“ faculty of the parts is any ways injured from too
“ great a quantity of aliment, which generates crudities, the accumulated humour immediately transfers itself to any joint which is before weakened,
“ and, distending the nerves that embrace it, occasions great pain.”

But Sydenham^z, considering the nature of the disease with the greatest attention, after finishing the history of the gout, says, “ Having applied the whole
“ powers of my understanding in contemplating all
“ the different phænomena of this distemper, I am
“ well persuaded, that it owes its origin to an apoplexy,
“ or injured concoction of the particular parts, as
“ well as the whole mass of humours.” And indeed what we have already said of the gout confirms this opinion: for it generally attacks the rich, and those who live in luxury and splendor; and some of these have been cured, when by unfortunate accidents they have been deprived of their riches, and obliged to gain

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^y Lib. iii. cap. 78. p. 57.

^z Tractat. de Podagra, p. 557.

a living by the sweat of their brows; for labour and bodily exercise will either subdue or expel depraved humours from an imperfect assimilation of the aliments. A ploughman devours with eager appetite the coarsest bread and bacon, which would be a grievous load upon the stomach of one who lives a studious and sedentary life: hence it is that we find those who apply too much to study and books, neglecting bodily exercise, so very often afflicted with this distemper: hence it is also, that old people are so often gouty, as their bodies, through years, are less agile, and rendered unfit to go through the necessary fatigues as formerly.

But this will be more amply confirmed when we come to treat of the cure. Physicians generally recommend a milk diet, as a nutritive liquid already prepared in the body of an animal, and which may be more easily subdued by weakly viscera. Sydenham recommends a diet of soft, well-boiled, simple food; and advises gouty people to eat only a dinner, and to go supperless to bed. Again, he in a particular manner enjoins exercise, especially walking, even altho' it should give some degree of pain. Now, if we consider these remedies, so very much recommended, we shall find them to be such as are chiefly calculated to restore and excite the languid action of the chylopoietic viscera, in order to forward a perfect assimilation. For if any thing faulty remain in the first concoction, it is hardly to be amended in the others. Nay, even though the liquids, which flow through the larger vessels, may be in all respects good and wholesome, yet there may be something, not altogether agreeable to nature, remaining in the very fine liquids that are separated from the blood, and move in these exceeding tender vessels, which being accumulated, and rendered still worse from stagnation, may occasion many various and surprising disorders. See §. 1262. It was from observing this morbid matter, so deeply fixed in the very finest of our fluids, that Helmont * imagined the gout took up its residence in the vital spirit: And as

be

* In capitulo; *Asthma et Tussis*, sect. xl. p. 293.

he places the work-shop or kitchen of the vital spirit in the præcordia; and seeing that, before a paroxysm, gouty people were always much affected about these parts; he was the more and more confirmed in his opinion. But, that this character, or disposition, resided chiefly in the very finest parts of both solids and fluids, he concluded from the gout being hereditary, and its lying concealed for so many years in the body ere ever it affects the nerves; whence he says^b,
 ‘ This gouty character, or disposition, is not intimately commixed with the red blood, but with that which immediately supplies the substance of the solid parts; for the blood itself, and all the alimentary apparatus, are many times changed, and renewed, before a hereditary gout makes its appearance.’ What indeed surprises most in hereditary diseases is, that something so exceeding subtle should have place in that very small molecula which constitutes the rudiments of a human creature, and that after a course of thirty years it should break out into a disease, awakening, as it were, from that quiet silent repose in which it had lain all that time. But we understand very little as yet of what respects generation, though the most ingenious among mankind have applied all their faculties, and have spared no pains or industry to unravel the mystery. The Author of all hath given to animals and vegetables a power of multiplying their species; and in performing this, something must be prepared from each individual, that, when separated from each individual, shall resemble it, yet without injuring the fabric of the original from whence it was produced: this is the offspring continuing to propagate its own nature, by substituting another offspring, and another after that. Such, we know, can pass out of an organised body, without prejudice to the same.

But the incomparable diligence of Reaumur^c has made it very clear, that the vital rudiments of a living animal may remain unchanged for many years, and
 (buried

^b In capitulo: *Volup. vivent. morb. sect. xi. p. 313.*
 pour l’histoire des insectes, Tom. II. p. 30.

^c Memoire

(buried, as it were, in a long and silent repose) forbear to give the least sign of increase; yet, when occasion serves, is afterwards capable of producing another animal, in all respects, according to its own likeness. In the vegetable kingdom, the rudiments of a future plant, contained in a ripe seed, may be kept in that state almost any length of time. A certain gentleman, who used to raise in his garden every year the finest melons, preserved the seeds in a clean, well-stopped phial, and never put them in the ground till after they had been kept ten years, persuading himself that finer fruit was produced from them when they had been kept so long. I saw myself some of the sensitive plants, which had been raised from seeds that were kept fourscore years, having lain neglected in a drawer since they had been originally brought from the Indies by the grandfather of the gentleman who put them in the ground; yet they grew with great life and vigour, and their leaves contracted at the smallest touch. The skilful naturalist Baillou, who presented the Emperor with an immense treasure of fossils and other natural curiosities which he had collected with the most unwearied pains and greatest industry, in order to have them reduced to better order, and from time to time augmented under the auspices of so high a patronage, found by chance, in a little drawer, a small quantity of beans, some of which were tinged with the most beautiful shining red, others charmed all that saw them with their pretty variegated colours. He shewed them to a gardener, second to none in his profession; who, after examining the seeds, said he believed, by proper management, they might be reared up into plants. The good old Baillou smiled, and gave him the paper he had found along with the beans, from which it appeared they had been kept above two hundred years; and though they seemed quite entire, yet he could hardly think it possible, that after the space of two ages they should be able to produce a plant of their own species. But the gardener, having with much ado divided one of these beans asunder with a knife, saw the bud entire, the
cōty-

cotyledons all safe and sound, nothing injured or musty: he then frankly told him, that all these reasons availed nothing; for he was certain that by proper management he could raise this bud, which had lain so long asleep, into life, and make it vegetate. Accordingly he macerated the beans a few days in pure water, till their outer surface was a little softened; then put them into some fresh rich earth; exposed them to a gentle warmth; and in a week or two some came up, and were soon succeeded by others; till at length, growing to their full maturity, they proved to be the kind of bean called *phaseoli*.

But even in the human body many things of this kind occur to our observation, which plainly shew that certain latent principles remain a long time without any increase, till after some years, and then they make their appearance all at once. The first rudiments of hairs are planted within the skin that covers the pubes; yet they only appear about the time of puberty, and then indeed they grow very quickly. I have seen the first rudiments of teeth very plainly in the broken jaw of a foetus, not only of those which come out at first, but also of those which speedily grow up, to supply the place of them that are shed by children of seven or eight years of age. It is well known, that in both jaws, the last *dentes molares* remain a long time hid in their sockets, and covered by the gums, even for twenty-five years, and later; then afterwards emerge with no small degree of pain: whence they are called *dentes sapientiæ*, or teeth of wisdom. Such rudiments as I saw in the jaw-bone of the abortion, was I surprised to observe come out in the jaw-bone of a woman above fourscore years of age, and who had not one tooth before in her head; and, what was most diverting, the heirs had no little apprehension, lest this withered childless old woman should renew her age again, and disappoint them. When, therefore, all that has been said is duly considered, it will not appear quite so absurd, that the seeds of the gout and other diseases should be so intimately conjoined to the first rudiments of the embryo, as not to shew themselves by any

any sign for many years, and at length, in some certain period of life, be awakened into action, and produce a disease alike in every respect to that which originally afflicted the parent. All things, as we have said, relating to generation, are full of mystery. The most accurate inquirers, indeed, have discovered many surprising and wonderful facts; but how these facts are produced, nobody hath as yet clearly explained, at least so far as I know. Therefore Columela ^b says: “ Nor, indeed, is there a power of generation given to the hands or feet: but the Creator of the universe, in order to conceal this from the knowledge of human kind, has therefore thought proper to hide it within the belly, that the Eternal Worker of all things, endued with divinest skill, might in some secret parts of the body mix these sacred elements of spirit with the terrestrial principles, and thus, as it were, in private, and under cover, model the figure of this living machine.”

§. 1266. **T**HE reason of this indigestion of the viscera (§. 1265.) may again be deduced from the remote causes enumerated at §. 1255 to 1258.

For if these are compared with what has been just now said, it will appear that they are such as disturb and obstruct the digestion, attenuation, or assimilation of the aliments; whence crudities arise: and if such-like causes act for any considerable time, from the natural disposition of the humours, they must be very liable to be much depraved, and on that account may greatly favour the production of the gout.

§. 1267. **T**O produce this disease, we must suppose that almost all the functions of the concocting organs are vitiated, and that with scarce any perceptible defect in the larger vessels, or in their fluids.

Errors

Errors committed in the non-naturals greatly disturb the functions of the viscera, and produce many other diseases. But the gout may be produced from them, although there be no visible defect in the larger vessels or grosser fluids; for (as has been remarked before, §. 1256, 1262.) the matter which causes the gouty pain in the foot, often gives no sign of its existence till it is deposited on the joints. Whence Helmont^e, although he places the seat of the vital spirit in the præcordia, and lodges his Archæus about the cardia or upper mouth of the stomach, yet did not believe any thing morbid to reside in the stomach, that could, as it were, furnish pabulum for the gout: “ For neither
 “ is this latent gouty character materially lodged in
 “ any particular nest, or received into any hidden and
 “ concealed plait of the stomach, adhering like any
 “ foreign tartareous matter; but it is conjoined to
 “ the very Archæus, or chief principle of life itself.”

Sometimes gouty people, during the intervals of the paroxysm, believe themselves to be in good health, nay, even when they have gone to bed very well, the cruel pain has awaked them in the middle of the night; whence it was concluded that the more immediate cause of the gout resided in the most subtle and finest parts of the solids and fluids: See §. 1262. But we observed, in treating of the Epilepsy and Intermitting Fever, that the proximate cause of these diseases lay also sometimes in these very minute parts; hence these diseases often change into, and sometimes destroy each other. We observed before, that a troublesome vertigo was wholly removed by a subsequent paroxysm of the gout. An intermittent fever has sometimes put an end to a true epilepsy. I myself had occasion to see a person, who had suffered under some paroxysms of the gout, at last seized with a vernal tertian intermittent; but the great toe of the right foot being seized with a sharp exquisite pain, after a second paroxysm of the fever, it left him, and returned no more. But every one knows, that a vernal tertian, even tho' mild, is seldom terminated before the fifth paroxysm,

VOL. XIII. K and

^e In capitulo : *A sede animæ ad morbos*, sect. xi. p. 230.

and for the most part only the seventh. It is usual therefore, in such fevers, spontaneously or by the help of art, to evacuate the bilious matter either upwards or by stool, which generally is attended with considerable relief: whence a remedy of this kind was prescribed for him, which he was to have taken in the morning, had not a fit of the gout come on the preceding night, which he did not care to disturb, and therefore wisely omitted to take it, and in fourteen days got free of his gouty complaints. He kept his health very well all the remaining part of the summer; nor could I find he had afterwards any bilious evacuations, though I desired both the patient, and those that were about him, to take particular notice.

§. 1268. **T**HE cure therefore is impossible, unless by such medicines as are able to amend these defects entirely, and thoroughly to correct that most subtle peccant matter. For this reason, the gout has been hitherto accounted incurable, except by a few quacks and boasting empirics.

To alleviate the pain, is not properly to cure the gout; seeing the pain always abates of itself, the fit going off when all the morbid matter is entirely dissipated. But the true cure of the gout is when there are no more returns of the distemper, even although the body is under the power of those causes that are able to excite a paroxysm, concerning which we have already discoursed, at §. 1258. For these procatactic or antecedent causes could by no means occasion the disease, unless there was a cause preexisting in the body, disposing it to be gouty; which as soon as you remove, you entirely cure the disease.

It is frequently seen, that by a proper diet the distemper may be rendered very mild. Nay, some patients, by living on milk alone, have been kept for several years quite free of a paroxysm: and yet these were not by any means cured, as the pre-disponent cause

cause still remained in the body: and though the accidental occasional causes might be hindered from acting by the use of such a regimen, yet the pre-disponent cause not being sufficiently roused up into action for several years, lay quiet and peaceable in the body: for it has been observed of these patients, that whenever they laid aside the milk diet, and returned to their former manner of living, they have had sharper attacks of the gout than ever, notwithstanding their believing themselves to be altogether cured and well. Here then is the chief point in view, to determine upon a radical cure, such as shall entirely destroy that *gouty character*, as Van Helmont calls it, and thoroughly correct that exceeding subtle morbid matter: for, as hath been said, §. 1256. that which burns and rages in the part affected, and is very painful, is not the gout, but only the effects of this disorder. That subtle depravity existed before the paroxysm, but occasioned no pain till it was deposited on the joints. Hence Helmont^f says, that, in curing this distemper, “ it is to be considered, how this seminal character of the gout may be eradicated out of the vital spirit, and nothing worthy of a choice and skilful physician is performed if this still remains; neither is it every clerk can have access to read the deep mysterious characters of this vital spirit, but only some chosen favourite friend of nature.”

Such are the virtues, he pretends, which are to be found in the *arcanum corallinum* Paracelsi, as destroying the gout in the first seeds; nor does it seem to be a medicine that purges by stool, *sed nostris constitutivis commiscibile*, “ but which intimately mixes with our constitutional elements.” This remedy, as far as we are able to guess from a description so obscure, seems to be a mild preparation of mercury, which does not violently disturb the body in any shape: For Helmont did not think violent evacuations necessary in this distemper; as appears from another place, where he says^g, “ Now there are certain diseases that depend

K 2

“ on

f. In capitulo, *Volup. vivent. morb. sect. 25. p. 315.*
capitulo, *Ignotus hospes morbus, p. 405.*

g. In

“ on no extrinsic occasional matter, but which, at the
 “ time of their appearance, quickly as fire from flint,
 “ throw out their own intrinsic subtile matter; ha-
 “ ving, I say, no other occasional matter besides these
 “ fine spiritual impressions: such, for instance, are
 “ the gout, epilepsy, madness, asthma, &c. the per-
 “ fect cure of which, to be sure, consists in destroy-
 “ ing entirely this seminal character and incorporeal
 “ ferment, and not in driving off any of the grosser
 “ particles of matter.”

The chemists placed great confidence in their arca-
 na, which they flattered themselves would penetrate
 into the most intimate recesses of the body. The an-
 cient physicians, again, cried up hellebore, which they
 took to have the like efficacy in eradicating the most
 obstinate diseases. Thus Aretæus^h says, “ Hellebore
 “ is a powerful remedy in the gout, but more parti-
 “ cularly in the first attacks of the disease; for if it is
 “ of a very long standing, or has been derived by fa-
 “ mily succession, it generally accompanies the pa-
 “ tient to the end of life.”

Sydenhamⁱ, after recommending a proper diet and
 exercise, &c. as serviceable to people in the gout,
 warns them at the same time not to imagine that they
 are to be altogether secure from the disease, however
 punctually they may observe these prescriptions: all
 that he promises is, only a more considerable mitiga-
 tion of their sufferings; because, says he, “ Whoever
 “ undertakes to cure this distemper, ought to make
 “ it his principal aim, first of all, to change the whole
 “ habit, and restore it to its primitive state of sound-
 “ ness, as far as the age of the patient and other circum-
 “ stances will admit: and this is only to be attempted
 “ in the intervals between the paroxysms, and not du-
 “ ring the continuance of the paroxysms themselves.”
 For he frankly confesses^k, that “ as to a radical, and
 “ in all respects a complete cure, by which one might
 “ be secured from ever relapsing into the disorder again;
 “ this, as yet, remains concealed in Democritus’s well,
 “ to

^h De Curat. Morb. Diurn. lib. i. cap. 12. p. 133. ⁱ De Podagra,
 p. 592, et seq. ^k Ibidem, p. 606.

“ or is laid up so close in nature’s bosom, that when
 “ it is to be brought to light, or by whom, we cannot
 “ indeed pretend to say.” Nor did he yet despair of such
 a remedy’s being discovered some time or other, from
 the example of the Peruvian bark, found to be suc-
 cessful in the cure of intermittents, that till then had
 so frequently baffled all the attempts of every physi-
 cian. From hence we see the reason why physicians
 have hitherto considered a radical cure, as a thing at
 least extremely difficult, if not utterly impossible. Hip-
 pocrates¹, speaking of the gout, says, “ That it is the
 “ most violent of all the disorders that affect the joints,
 “ the hardest to subdue, and the most permanent;
 “ yet, however lasting or troublesome, is by no means
 “ mortally dangerous.”

Hence the gouty chorus in Lucian^m calls the god-
 dess Podrgra the Invincible; and thus she styles her-
 self, ἀνίκητον δησποτιν ποναν, the Insuperable Mistress of
 Painsⁿ, who is to be appeased by no incense, and is
 still more implacable to those who endeavour to please
 her by a number of remedies: On the contrary,

*His, qui nihil sapiunt mihi contrarium,
 Animam gero mitem, et fio placabilis.*

But as for those that let me take my swing,
 They find me mild and gentle as a lamb.

But Aurelian^p, recounting the causes why the cure
 is so difficult, and frequently impossible, among the
 rest takes notice, “ That this disorder is so slight in
 “ the beginning, as hardly to be regarded, and ga-
 “ thers strength more and more from being thus ne-
 “ glected, &c. Hence it meditates a longer conti-
 “ nuance, and to take at length entire possession of
 “ the body: nor can any thing contribute more rea-
 “ dily to this, than the long intervals of ease, where-
 “ by it seems to withdraw, and flatters the patient
 “ with the vain hopes of being thoroughly cured; for,
 “ without doubt, the same intemperance renewed,

K 3.

“ which

¹ De Affection. cap. 8. Charter. Tom. VII. p. 629.
ⁿ Ibid. p. 653.
^p Morb. Chronic. lib. v. cap. 2. p. 560.

^m Tom. III.

“ which so often brings on the attacks of the disorder,
 “ may likewise greatly contribute to fix it still deeper
 “ in the constitution.”

Quacks and bold empirics, who venture so often to play tricks upon the human skin, boast of their arcana, by which they pretend radically to cure this disorder; and as the gout particularly infests the richer sort of people, they flock from all quarters to sell their insignificant stuff, at a very high price, to those who are silly enough to trust in their impudent pretensions. I have known several, who, notwithstanding they have often been deceived by these venders of arcana, were yet as ready as ever to lend an ear to the first strolling quack who made the same false pretensions: for mankind are ever prone to believe in what they most desire to be true. And such quacks do often gain credit, by applying their remedies to the part affected, during the height of a paroxysm, which seemingly takes away the pain; whereas in fact, at the declension of each particular fit, the pain generally abates of itself. But Sydenham^a advises the patients, “ rather to try these
 “ arcana in the beginning of a paroxysm, and then
 “ they will be convinced of the vanity of their ex-
 “ pectations, and the insignificancy of the remedy;
 “ for these epithemas never do any service, and very
 “ often do a good deal of harm.” Something of the like nature has been remarked, even by Aurelian^r, before Sydenham’s time. After having enumerated and exploded all the farrago of medicines recommended by different hands: “ It also happens,” says he, “ that the pains are of themselves alleviated at
 “ the termination of every fit; and thus the remedy,
 “ if it chance to be applied at or very near the declen-
 “ sion of a paroxysm, shall bear away the honour of
 “ the cure: but even, should it be allowed to be of
 “ real service towards the end of a paroxysm, it must
 “ follow, on the contrary, that in the beginning it
 “ has all the chance to do harm.”

I heartily wish the same thing might befall all such impostors, as Lucian^s very shrewdly feigns to have befallen

^a De Pod. p. 501.

^r In loco modo citato, p. 565.

^s Tom. III. p. 660.

befallen the two quacks from Syros. These men, urged by poverty and hunger, had travelled by sea and land over all the world, pretending to be possessed of a secret, left them by inheritance, of an ointment that could allay the most tormenting pains; the composition of which unguent they had bound themselves by oath never to reveal: but the goddess Podagra, in the highest displeasure, commands the unrelenting pœnæ, companions at their Bacchanalian festivals, to fly quickly thither, and to torture these wretches without mercy, till, having in vain tried all the power of their ointment, they should be forced to acknowledge that the goddess Podagra was to be conquered neither by their arcanum, nor that of any one else: and thus, conscious of her invincible power, cries out,

*Cognoscat unusquisque, me solam Deum
Non delinire pharmacis, non obsequi.*

—That every one may know

That I the only goddess am, who dumb

To tears and supplications, sighs and shrugs,

And quite inexorable then become

When once assail'd by 'pothecaries drugs.

§. 1269. **T**HE hereditary gout, and that which generates chalk-stones, is, of all others, the most difficult to cure.

Although the gout is always very difficult to be cured; yet physicians acknowledge, that in the cure of this disease there are different degrees of difficulty; and are pretty unanimously agreed, that the hereditary sort, of all others, is the most difficult. Nay, even Aretæus, as we said before, despairs of it: he does the same of that, too, which is grown so inveterate as to produce gouty chalk-stones in various parts of the body.

However, notwithstanding all have acknowledged the hereditary gout to be the most difficult to cure, yet by no means does it appear that we ought wholly to give up all hopes of success: for it is clear
from

from what has been observed, that the disease sometimes passes from a grandfather immediately to a grandson, whose father remains all his life free from the distemper; and this will more readily happen, if he lives a life of sobriety, and is daily inured to some bodily fatigue. Seeing therefore afflicting poverty hath been known to eradicate a confirmed gout, why may it not have the power also to keep the hereditary gouty taint always quiet and unactive, and lull it, as it were, asleep through the whole of life? It is true, indeed, the hereditary tendency to the gout doth not seem to be entirely destroyed, as it still descends to the rest of the offspring: but yet a temperate life, and wholesome bodily exercise, may notwithstanding hinder the latent remains from breaking out with violence; and so in time there may be a chance of extirpating the very root of this distemper out of such a family. Thus, by keeping down the spitting of blood, we have seen a hereditary phthisis entirely destroyed, as we mentioned when treating of that disorder.

A physician^t, who in the very flower of his age had been attacked with a sharp fit of an hereditary gout, by a strict diet, and some other remedies to be mentioned afterwards when we come to speak of the Cure, kept himself entirely free from the gouty pains for the space of twelve years and more: yet the root of the distemper does not seem to have been here destroyed; for he says, that he had dictated his treatise when he could not write himself, (being laid up under the power of a merciless disease, in the midst of an inclement winter,) as well to pass the disagreeable hours, as to be of some real service to his fellow sufferers. Yet even from this it appears, how much a physician may promise himself from a patient tractable and persevering, and who has a mind to purchase a release from the pains of this distemper by a frugal and strictly sober life. Cornaro, having by diet alone freed himself from the gout and several other diseases, lived to be a hundred years old; and died at last of old age alone, without any antecedent distemper.

^t Coste traite-sur la goutte. In præfat.

per^u: yet he was forty ere he began to live in this manner: for before that, he had lived a life of pleasure, and been much subject to maladies of various kinds.

But when this disease prevails so far as to generate chalky tumours in different parts of the body, Sydenham, as hath been observed before, at §. 1260, 1261, thought in that case the whole body was converted into a gouty fomes, and therefore considered it as hardly possible to be cured. Hippocrates^w, speaking of this disorder, gives pretty much the same prognosis. *Whoever either labours under the weight of old age, or hath callous tumours about the joints, or lives a life of anxiety and care; all these, as far as I know, cannot be remedied by any human art. &c. But a person who is young, and has not yet callosities in the joints, lives regularly, and is fond of bodily exercise, whose belly is in a good state of regularity, and can be moved at pleasure: such, if he is under the direction of a prudent physician, may readily be cured.*

Yet some advantage, as we shall see afterwards, may be gained even in a tophaceous kind of the distemper, by an orderly method of living, and proper remedies. Sydenham^x assures us, that he has found
 “ that long continued exercise, every day, has not
 “ only served to hinder the generation of tophi, but
 “ also to resolve indurated tophaceous tumours of
 “ some standing, provided only they were not come
 “ to that height as to convert the outer surface of the
 “ skin into a substance of the same kind.” But we shall mention some other particulars relative to the possibility of resolving gouty chalk-stones, when we come to speak of the Cure.

§. 1270.

^u Cornaro raadgeving, &c.

^w Quicunque, aut senes sunt, aut circa articulos callos (επιπρωγματα) habent, aut ærumnose vivunt, hi omnes sani fieri non possunt humana arte quantum ego novi, &c. Qui vero juvenis est, et circa articulos nondum callos habet, et accurate vivit, et laborus amans est, et alvum bonam habet ad obediendum, pro studiorum ratione, hic sane, medicum intelligentem nactus, sanari poterit. *Predict. lib. ii. cap. 7.*
Charter. Tom. VIII. p. 815.

^x De podagra, p. 590.

§. 1270. **F**ROM the same we may conclude, that bleeding does not reach the matter, seat, or cause of the disease; though it may sometimes accidentally prove beneficial, by making a small revulsion, and by lessening the symptoms enumerated at §. 1257.

It is clear, from what has been said at §. 1262, that the proximate cause of this distemper chiefly resides in the very finest fluids, and the most minute vessels in the body: whence we concluded, at §. 1268, that a cure was only to be expected from such remedies as could entirely amend these latent defects, or correct the depravity of that very subtle morbid matter. Now, by venesection, there is only a grosser part of our fluids drawn off, to wit, the red blood returning by the veins from the arterics after the secretion of the all the finer liquids; whence it is plain, no part of the morbid matter can be evacuated by this means, nor the depravity in any shape be corrected, as it has its residence in fluids and vessels exceedingly more subtle and minute.

But the question here, is not whether bleeding may not sometimes be of service, but whether it ought to be advised for the gout. If the patient be plethoric, or has accustomed himself to bleed at stated times of the year, then venesection is without doubt necessary, (as we observed in §. 106.) If the matter of the disease is not deposited on the usual parts, and the paroxysms are attended with a violent fever, delirium, or difficulty of breathing, bleeding is prescribed, in order to alleviate these dangerous symptoms, and to determine the gouty matter towards the joints; but not in hopes of curing the gout entirely by this evacuation: for, as the celebrated Mead^y observes, the general effect of bleeding “is to make the distemper “shift and change the place which it first possessed.” If therefore the gouty matter should infest the breast, or attack the brain or any of the viscera, venesection may

may not only be of use to mitigate these troublesome and dangerous symptoms, but also to dislodge the disease from these parts, and cause it to fall upon the joints.

But from this it is at the same time evident, that when the gout is once properly transferred to the joints, we should be very apprehensive of bleeding, lest it change the place of the morbid matter, and drive it towards the viscera, as we shall afterwards consider at §. 1273: whence Sydenham^z lays down what follows as a good practical rule in the cure of this disease: “ Bleeding is by no means to be allowed, either by way of preventing a fit that is expected, or of mitigating that which is already come; I mean, in people of an advanced age: for though the blood drawn at this time commonly resembles that of pleuritic persons, or such as labour under rheumatic disorders, yet phlebotomy does full as much harm to patients in this disease, as it does service in these others.” He has no objection, it is true, to the taking away some blood at the beginning of a paroxysm in young people, especially if they have been known to have indulged a little too freely in drinking. “ But if, in the subsequent paroxysms, there should be constantly a recourse to bleeding, the gout will grow quickly inveterate, even in young persons, and extend its dominion, or rather tyranny, a great way further than otherwise it could have done after a number of repeated paroxysms.” And Ægineta^a indeed, who describes the gout agreeably to the notion of the four humours, constantly prescribed bleeding in the sanguineous kind, nay, even in the pituitous and melancholic, in order to draw the noxious humours away; but gives the following caution: “ Bleeding is only to be attempted immediately upon the first attack of the distemper; for those who have been frequently attacked, perceive more harm than benefit from this remedy, more especially if they are of a frigid and weakly constitution.”

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^z De podagra, p. 560.

^a Lib. iii. cap. 78. p. 57, versa.

It is true, indeed, Galen^b is for having gouty and arthritic people undergo an evacuation of some sort, about the beginning of the spring season, whether by bleeding or by a purgative, assuring us he hath cured several in this manner. Yet he adds, as a caution, “That he would be understood to mean only those “that were strictly regular in their diet and manner “of living.” For as to the intemperate, and those who were delivered up to gluttony and drunkenness, nothing, he imagined, could do service. He joins likewise exercise to a wholesome regimen of diet. Now from what has been already said, and from what we have still farther to say, it will appear, that wholesome exercise and regular diet are two things of the greatest consequence in the cure of the gout that is not yet become quite inveterate, such as that seems to be in which Galen prescribed bleeding in the spring.

We have said before at §. 1257, that the ancient physicians, upon seeing the veins turgid in the part affected, and the patient complain of a burning heat, and observing the part swelled and painful, tried venesection; not only in places remote, for the sake of revulsion; but likewise opened a vein in the affected limb itself, and took a large quantity of blood away. Aëtius informs us of his having freed a person entirely of his complaints by this evacuation, which he says took off the tension that in this case was very strong upon the parts; for thus the force of the matter that pressed upon the affected joint was lessened. Besides, it has been observed before, that immediate ease might be expected whenever the part begins to swell; so that the cessation of pain is not so much owing to the effects of bleeding alone. A physician of Ghent^c, who has made some pretty bold and successful experiments in the cure of several diseases, recommends bleeding in the very joint affected, or near it; and assures us, that in one day the pain has been known to vanish, inso-much that the patient has been able to walk upon the limb affected: whence he concludes, it would be
of

^b De Curandi Ratione per Venæ-sect. cap. 7. Charter. Tom. X. p. 436.

^c Vnder Heyden. discours et advis, &c. p. 72.

of service, in preventing a return of the gout, to open a vein near the ball of the great toe, where the distemper generally fixes^d. But, without doubt, it is one thing to soothe and alleviate a paroxysm, and another to cure the disease: and from what has been said, we see frequent bleeding must do hurt by weakening the body. Hoffman^e indeed recommends cupping-glasses with scarificators to be applied every three months to the back of the foot; and says, that “he found they were of the utmost service to many, and even to himself, who had sometimes been subject to gouty attacks, though not very violent or of very long duration.” It is very well known, that this celebrated physician had great confidence in these sorts of preventative bleedings, even for the healthiest people, as believing them of mighty use in keeping them clear of all acute distempers. Besides, it is to be observed, we speak here of the radical cure of the gout, which, for reasons already explained, can by no means be expected from blood-letting. When Ocyppus, in Lucian^f, pretending ignorance of the distemper, and willing to deceive the physician by making him believe he had got a strain in his foot at the place of exercise, the physician had prepared “a sharp, blood-thirsty, half-rounded kind of instrument,” in order to scarify the part affected; when Ephorus, running up to him in a hurry, cries out,

Soter, quid occipis? sic te fugiat salus?

Audes, quæsitæ ferro pœnas addere?

Ignarus omnium, malum admoveo pedi:

Mendacia tibi dicta, quæquæ dicta sunt.

What would you do, rash man, with butchering steel,
To add fresh pains to what he now does feel?
Blind to the source of all, how dare you go,
Plague on your haste! his wretched limbs t’undo?

Whence it appears, that scarification, from the earliest times, hath been generally condemned.

VOL. XIII.

L

§. 1272.

^d Ibid. p. 83.

^e Medic. Rat. et Syst. Tom. IV. parte 2. sect. ii.

cap. 11. p. 525.

^f Tom. III. p. 670.

§. 1271. **N**EITHER are vomits or purges of so great efficacy here as is commonly imagined; since they frequently raise commotions of the nervous fluid, carry off the finer liquids, and weaken the expelling faculty.

Several have commended this method in the cure of a gout; and, it is probable, for the following reasons.

It was formerly observed at §. 1257. that gouty persons felt the first signs of an approaching paroxysm about the stomach and præcordia, engendering crudities, stinking belchings, a restricted belly, flatulent disorders, and a languid appetite; and sometimes occasioning, the day before the fit, an extraordinary appetite; nay, sometimes, as we have seen at §. 1258. so remarkable as to excite a *fames canina*; and it was there also observed, that the eating of bacon-fat, and things of that sort, which were hard of digestion, as also all the errors committed in the non-naturals, that occasioned crudities, greatly accelerated the paroxysm. Now all these particulars seem to indicate, that there resides something noxious in the primæ viæ, which ought to be expelled either by vomit or stool.

Whence Trallian^s advises purgatives, even to be repeated, “if the humour which flows upon the joint
“appears bilious or acrimonious.” And then he entirely condemns bleeding; yet gives a very prudent caution, “not to purge the bile till you have diluted
“and subdued the sharpness and acrimony.” And, to prevent too great a disturbance, apprehended from a strong purgative remedy, “the patient is not to be
“purged all at once, but at several different times:
“for thus you will be better able to preserve the joints
“free from grosser defluxions, if you attempt to draw
“them off by degrees, and not all at once.” And he repeats the same caution afterwards in the cure of the pituitous and cold sort of gout; for then he gave the warmer purges^h, “aloes, black hellebore, euphor-
“bium, &c.” And he remarks, at the same time,
“That these not only ought to be administered by
“way

^s Lib. ix. cap. i. p. 600.

^h Ibid. p. 615.

“ way of prevention during the intervals of remission;
 “ but also during the accessions themselves ; for they
 “ mitigate the paroxysms very much, by drawing off
 “ the matter from the part affected, and by that means
 “ hindering any afflux to the place for the future.”

Afterwards he advises to repeat the purgatives every second or third monthⁱ. Demetrius Pepagomenus^k, not only desires the patient to take a purgative at the declension of the fit, but likewise when it is at the height. Fernelius, in a consultation for Albert the younger marquis of Brandenburgh^l, advises, in the very paroxysm, “ the body to be purged by a medicine, not of a weaker kind, lest it rather irritate than evacuate the humours, and by so doing redouble the afflux ; but of strength sufficient to draw the superabundant humours from the parts both above and below :” And should the pains continue, he thinks such a remedy ought to be a second or third time repeated. Hoffman^m too recommends it to young physicians, as a good practical rule, “ That pains of every kind are always rendered milder, in whatever place they are, if, before any other remedy is exhibited, the first passages be well cleared of their vitious contents, which otherwise may get into the blood, and, penetrating into the parts affected, may render the pains more intense, and produce other more terrible symptoms.” Though at the same time he chiefly recommends the use of glysters, and the gentler cathartics, such as manna, rhubarb, cream of tartar, and the like.

If there are certain signs of filthy unwholesome matter collected in the primæ viæ, to purge it off by a gentle evacuation does not appear so hurtful ; but it does not by any means appear eligible to disturb the body with sharp irritating remedies, in expectation of driving off the gouty matter by stool, more especially if it is deposited at the joints, or near being deposited ; for then we have reason to fear, lest the matter be driven inwards ; and from thence, indeed, may arise the

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worst

ⁱ Ibid. p. 619. ^k Cap. 29. p. 69. ^l Parte ii. p. 332. ^m Med. Rat. et Syst. Tom. IV. parte ii. sect. 2. cap. 11. p. 529.

worst of mischiefs, as we shall afterwards see at §. 1273.

It is true, indeed, that observations do plainly shew, that throwing up by vomit a sharp and acrid matter had greatly relieved some persons in the goutⁿ, a memorable instance of which was related at §. 1255. Yet this vomiting was spontaneous, and provoked by no medicine; nay, though the patient drank plentifully of warm water, or endeavoured to provoke the vomiting by introducing his finger, he could not succeed, when this acrid matter had once been expelled before, though in the smallest quantity. Hippocrates also seems to have placed some hopes of the cure of this disease in a dysentery; for thus he says: *For dysenteries coming on afterwards, cure these exceeding well; and there are other profuse evacuations, that tend towards the inferior parts of the body, which are also of great service*^o.

Hence it does not seem altogether improbable, that part of the morbid matter may go off in this way: but during the time of the fit, the work of nature seems to be more requisite than the attempts of art: and therefore diluent drink, or an emollient gentle clyster, appears to be very well calculated to assist nature; but to provoke these evacuations during the time of a paroxysm by any sharp stimulus, is certainly very improper. But the use of purgatives during the remission of the paroxysms, we shall afterwards consider it at §. 1276.

Sydenham was no friend to purging, yet he acknowledges that the morbid matter sometimes goes off by stool. For when he treats of checking a gouty diarrhœa, he says, “If the gouty matter occasions a diarrhœa, for want of being translated to the joints, provided it be not the crisis of a particular fit, then a sweat is to be raised, which generally stops the diarrhœa, and forces the morbid matter to the limbs^p.” By this method he saved his own life, when

ⁿ Observ. Interfess. sur la Goute, &c. p. 260, et seq.

^o Sanant quidem hos optime dysenteriaz, si successerint: sed et aliaz eliquationes valde profunt quæ ad inferna loca repunt. *Prædict. lib. iii. cap. 7. Charter. Tom. VII. p. 815.*

P Swan's edit. p. 504, 505.

when he had fallen into this danger by drinking imprudently cold water for his common drink. Moreover, he advises to try nothing forcible during the paroxysm^a; for rest alone, and soft mild diet of the tender kind of meat, will be sufficient; but absolutely condemns all purgatives whatever, either at the time of the paroxysms, or during the intervals^r. He owns he brought upon himself a new paroxysm, by endeavouring to purge away the remains of the former: and although, as we mentioned before at §. 1258, he confesses afterwards that purgatives may safely be given to gouty people, when bloody urine or other symptoms of that nature require it, taking care by liquid laudanum to allay the tumult occasioned by the purgative; yet he makes the following remark^s: “Never-
“theless, with respect to the gout only, all evacua-
“tions whatever commonly do harm; and therefore are
“by no means to be administered, unless the aforesaid
“symptoms require they should be given:” Nor do we find that Mead^t expected much good from the use of purgatives in the cure of the gout, but rather thought they made the distemper rage with greater fury at the joints; for when there is a hazard of the disease retiring inward to the vitals, he recommends warmer cathartics, not very strong, to bring back the gouty matter to the place it first occupied.

If then all these things are rightly considered, it will appear very plain, that there is not so much good to be expected from the use of purgatives, or emetics, as people generally promise themselves, and more especially when administered by ignorant strolling quacks. When they are strong, and given during the time of the fit, they certainly disturb the body too much; whilst at the same time, by draining off the thinner liquids, and by that means thickening the remaining juices, they do a great deal of injury.

§. 1272. **S**UDORIFICS skilfully administered are
of greater benefit.

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^a Tractat. de podagra, p. 594.
Sanguin. ibid. p. 704.

^r Ibid. p. 562.

^s De Medic.

^t Monita et Præcepta Medica, p. 179.

The seat of the disorder lying in the 'more minute vessels and finer fluids, it appears agreeable to reason, that the malady should with greater safety be expelled through the orifices of the smaller vessels which open upon the surface of the skin. Anatomists have discovered the incredible smallness of these cuticular pores; and Sanctörinus has demonstrated, that there flies off every day a very considerable quantity of the finest fluid through the orifices of these vessels. If then we consider what a vast number of little nerves are inserted in the skin, and terminate there, as Eustachius in his tables has endeavoured to represent, it will appear almost certain that these cannot all be employed on the touch alone, which is not by any means so exquisitely sensible in other parts of the body, as at the extremities of the fingers; but that many of these serve to exhale a subtile fluid through their extreme minute orifices opening into the skin, which would prove noxious if allowed to remain in the body. For it is observed, that the functions of the body are greatly disordered, and that many diseases take their origin, from an obstructed perspiration. The first symptoms usually arising from this obstruction are a lassitude and heaviness of the whole body, so that the muscular motions, which require a free brisk action of the nerves, are performed with the greater difficulty. Sanctörinus remarks, that bacon particularly, and other fat meats, as also damp, stormy, or cold weather, greatly hinder perspiration. But we have already observed, at §. 1258, that the gouty paroxysms are not only accelerated, but are unexpectedly brought on, from the same causes. Besides, it was remarked, at §. 1261. that the paroxysm goes off by a gentle moisture and diaphoresis of the part affected, expelling the morbid matter through the pores of the skin. Now all these observations are strong arguments for the use of sudorifics.

Sydenham^u, though he had no great reliance on these, yet allows, that to evacuate the peccant matter by sweat, is less hazardous than when it is attempted either by purges or vomits. In the mean time, he gives

^u Swan's edit. p. 478.

gives this caution, “ In the gout, that gentle moisture which commonly breaks out in the morning spontaneously after each of the lesser paroxysms, of which the greater consisted, mitigates the pain as well as the restlessness, which had afflicted the patient during the whole night: on the other hand, if this gentle moisture, by nature apt to fly quickly off, should continue to be forced out in a larger proportion than the matter concocted by the last paroxysm will bear, the disease will be rendered more violent.” Whence it appears, however, that he condemns only those sweats which are excited by hot stimulating sudorifics; but he did not think there can be any harm in giving diluent and gentle aromatic drinks, to forward these first attempts of nature, without increasing too much the motion of the fluids: for during the time of the paroxysm, as we said before, nothing forcible is to be attempted. He acknowledges indeed, “ that sudorifics did not repel the morbid matter to the viscera; but rather propelled it through the whole habit.” His only fear was, lest hot sudorifics, given during the time of the paroxysm, should too forcibly drive the morbid matter into the articulations, and by that means occasion intolerable pains; and also, if in too great quantity, cause it to fall upon other parts, and excite the same degrees of pain: whereas, if the disease follows its own natural course, it is not usual to have pain in any other member, unless there has been a more than ordinary afflux of matter to the place first attacked by the disorder. But should the body superabound with ferous, filthy humours, then he was justly afraid of an apoplexy from the use of warm stimulating medicines, as exciting too sudden a motion in these humours, that before either stagnated, or at least moved quietly on, within the vessels. Concerning this caution we have already spoken, when we considered the nature of the slow, pituitous, and cold sort of apoplexy.

But he in like manner condemns the use of sudorifics during the intervals of the fits, lest the gouty matter,

matter, not sufficiently concocted, should be forcibly driven towards the joints, and a new paroxysm be excited before the due time. But he was not averse to such sudorifics as were gently aromatic, and properly diluted with water, as appears from the drink he prescribed to his patients in the intervals of the fits, which is composed of china, sarsaparilla, saffra, aniseeds, &c.

§. 1273. **N**OTHING can be more hurtful than to hinder the gouty matter, now sufficiently ripe (§. 1263.) and which cannot safely by any other way be carried off or corrected, to discharge itself at the usual places (§. 1259, 1260.) which, though indeed the most painful, are yet the least dangerous. For if the retained matter seizes the brain, it occasions apoplexies, palsies, deliriums, debilities, tremors, lethargies, and universal convulsions; if it attacks the lungs, it causes an asthma, cough, and suffocation; if it invades the pleura or intercostal muscles, it produces an obstinate convulsive pleurisy; if thrown upon the abdominal viscera, a nausea, anxiety, vomiting, eructations, gripes, and spasms of these viscera; and I know not how many more diseases, that often become suddenly fatal, which cannot be cured by means and methods effectual on all other occasions, unless you bring on a fresh and smart fit of the gout. This danger happens from an imprudent use of narcotics, refrigerants, constringents, incompressants; or from medicines which weaken, evacuate, and reveal towards the superior parts. Hence bleeding, vomiting, purging, cataplasms, and all opiates, produce this effect; and so does the spontaneous weakness of decrepit old age; or when the extremities

umities are so obstructed, dried, and destroyed, that the morbid matter can no longer pass thro' them. Hence it is plain, what kind of gout it is, and with what symptoms it is attended, that proves fatal to gouty people.

It is evident, from what has been hitherto said, that the morbid matter, which produces, at its own proper time, a fit of the gout, is, during the intervals, by degrees accumulated in the body, and being as it were again ripened, is at length deposited at the usual places, and there excites the most tormenting pains. Whence, as we before observed at §. 1267. people are generally apt to think themselves very well, when yet, perhaps, a paroxysm is near at hand; or, if there is any change in regard to their health, are ready to ascribe it to other causes. On this account, it was remarked at §. 1256, 1268. that the pain and burning, perceived in the part, was not the gout, but only the fruit of that distemper. This fruit of the latent distemper, or peccant matter, is thrown out by nature, and deposited on the extreme parts at a distance from the viscera, and particularly towards the feet, in which the goddess Podagra is usually feigned to be enthroned, as hath been mentioned more at large, §. 1261. If any one, therefore, thinks himself possessed of such a remedy as can, without hurt or danger, change this gouty matter, so as to render it similar to the healthy humours, and fit to pass freely thro' all the vessels of the body, without disturbance or commotion; or even if he knows how to drive off, with safety, this morbid matter, when mature, and just ready to bring on a paroxysm; let him enjoy his good fortune: but we must have evidence of it from real facts, for it will not do to flatter the miserable sufferers with vain promises only. Sydenham, as we mentioned before, with truth observes, that such a remedy as yet lies undiscovered; though he does not despair but that it may some time or other be brought to light. In the cure of this disease, it will afterwards appear, how much a proper diet and fit remedies may contribute to lessen

fen the quantity, and correct the acrimony, of the morbid matter that is accumulating during the intervals between the fits, and thus obtain a longer interval, and sometimes even greatly abate the severity of the disorder. But how this morbid matter, fully ripe, and ready as to quantity, may either be thoroughly corrected, or safely expelled by any other way out of the body, no one, as yet, by certain and credible experiments, hath demonstrated.

Nature deposits this matter at the joints, and what is so deposited is either gradually dissipated there, or thrown off by perspiration, and sometimes by a thick fetid sweat; but till these operations are finished, the patients suffer the greatest torments, which they would be glad to buy off at any price. Sydenham, after the strictest attention to the genius of this distemper, observed^y, that gouty people, the more violent and sharp the pain had been, regained always a firmer state of health afterwards, and were so much the longer of being attacked again with a new paroxysm: “ When the disorder goes off, the patient’s appetite
“ and good habit of body return, in proportion to the
“ sharpness of the pain in the late paroxysm; and in
“ the same proportion is the subsequent one either
“ accelerated or delayed: for if the patient has suf-
“ fered very severely from the late fit, he will not
“ probably have another till that time twelvemonths.” Whence he was of opinion, as we said before, that the pain was nature’s bitter remedy, which she employed in subduing this distemper: “ For the more gentle
“ she is in regard to pain, the more she hinders the
“ concoction of the humours; and the more sparing
“ she is with respect to lameness of the parts, so much
“ longer is the expulsion of the morbid matter retarded^z.” Nay, when the pain was extremely severe, he never was apprehensive about the life of the patient; but when the pain either remitted too soon, or had been more than usually gentle, as commonly is the case with people who have long had the distemper, and more particularly if they are far advanced in years,

years, then indeed he thought there was the greatest danger^a. Whence Hippocrates^b also pronounces this distemper to be long, troublesome, and difficult to cure, though not very mortal; for we see that gouty people, if they are patient under this distemper, arrive commonly to good old age. Hence the goddess Podagra, in Lucian^c, extremely angry that all mankind should curse her alone, and not rather the pain, says,

*Verum dolor mihi malorum adjutor est;
Nihil ego namque sum, si ab hoc relicta sim.
Hoc ergo mordet, hoc animum subigit meum,
Dolorem quod malorum originem omnium,
Maleficis maledictis haud quisquam sauciat,
Sed contra me laxant vocem execrabilem,
Mea sperantes evitare vincula.*

But to the fury Pain it is I owe
All my tormenting pow'r of causing wo.
'This grieves my soul, this galls me to the heart,
'That none should curse the author of their smart:
For without him, I'm nought; and yet, you see,
All, all let fly their horrid oaths at me,
With imprecations vile my name profane,
As if by these they could escape my chain.

Hence the goddess acknowledges Pain to be her inseparable attendant; and from pain it was that Sydenham expected a safe release^d. "For when the morbid matter is not only generated, but already transferred to the joints, our endeavours, either to change it or throw it off in any other way, will then be too late, seeing it is not to be evacuated by any other method than that which is pointed out by nature, to whose care it ought to be committed entirely." In the mean time,

*Multæ formæ infortunatorum,
Meditatio pœnæ, et consuetudo,
Podagras miseros consolentur^e.*

Misery in various shapes,

Habitual

^a Tractat. de Podagra, p. 597.

^b De Affect. cap. 8. Charter.

Tom. VII. p. 630.

^c Tom. III. p. 665.

^d Tractat. de Podagra,

p. 593.

^e Lucian. Tom. III. p. 663.

Habitual acquaintance with their torments,
Are all the comforts left to wretched sufferers.

For when the gouty matter is hindered from discharging itself at the joints; or, when deposited there, if it is again repelled; the patients are always threatened with the greatest danger.

For if the retained matter seizes the brain, it occasions apoplexies, &c.] It was before observed, at §. 1260, that the gouty matter came to be transferred to various places of the body, when the parts accustomed to receive it formerly, during a paroxysm, were so altered and dammed up by the long continuance of the disease, or other causes, that they either could not at all, or at least with great difficulty, receive it any longer. It was at the same time evident, that the matter not only extended itself universally over all the external parts of the body, but sometimes even seized upon the viscera; and therefore it is plain, that according to the different parts on which it seizes, such will be the different disorders that from thence arise. But seeing it can afflict the tendons, ligaments, and the very bones, the hardest parts of the body, what mischiefs may we not apprehend, when the same morbid matter exerts all its force upon the viscera? There are numerous examples, in medical history, of sudden death following in consequence of a repulsion of the gouty matter. Demetrius Pepagomenus^f, speaking of this disease, makes this remark: "Nor is it only
" to feet, hands, and all the joints, that these de-
" fluxions are carried; but also to the brain, liver,
" and even the heart itself; the consequences of which
" are very bad indeed, and very difficult to remove." If then the gouty matter is deposited on the brain, it occasions every disorder that the brain is subject to, even a sudden and mortal apoplexy: Instances of which I myself have seen, when, at the usual time of the paroxysm, the pains were either very gentle, or went off in a hurry: for then a vertigo, tremor, and apoplexy, soon follows; and that so quickly, that all
remedies,

^f Cap. 5. p. 21.

remedies, however otherwise efficacious, came too late.

If it attacks the lungs.] There then succeeds a violent asthma, that threatens suffocation; which is preceded by a dry, uneasy cough. This has been observed by Aretæus^g: for he remarks, “In many cases the gout terminates in a dropsy, and sometimes in an asthma; and this succession is impossible to be avoided.” Sydenham observed^h, that, if a cough had been contracted in the winter from cold, during the time of the paroxysm, “the morbid matter was gradually drawn towards the lungs, while the joints in the mean time, on account of this translation of the matter to another quarter, were either altogether, or very nearly, freed from the pain and swelling.” And although, as we have said, he condemns all evacuations during the fit, yet in this case he advises to treat the disorder, like any other peripneumony, by bleeding and other remedies, on account of the great hazard of suffocation. Should they even escape this particular danger, there is yet reason to fear, if the gout be of the tophaceous sort, lest something of this kind of matter be deposited on the lungs, where, as we said before, at §. 1261, chalky concretions have sometimes been found.

If it invades the pleura, &c. it produces an obstinate convulsive pleurisy.] I remember to have had a person under my care, who had long been afflicted with the gout, and used to be only free of pain during the summer months, who was in the highest degree of joy on getting a whole year’s respite from the distemper: but all at once he was taken with a vomiting, and afterwards seized with a terrible pleurisy, which threatened immediate suffocation. After twice bleeding, the danger grew less; and by constant irritation with strong blisters, the feet became painful; the breast was more and more relieved; and at last the disorder went off. But the paroxysms did not return regularly; and when the hands and feet were affected, yet the pains were rather slight, and of short conti-

VOL. XIII.

M

nuance:

^g De Caus. et Sign. Morb. Diurn. lib. ii. cap. 12. p. 67. ^h Tract. de Podagra, p. 599.

nuance : whence a pleurisy, like the former, returned three times in the space of ten months ; till at length every thing that was tried as a remedy proved ineffectual, and he died.

If thrown upon the abdominal viscera, &c.] What mischiefs are to be dreaded from this matter falling upon the stomach and intestines, we may easily comprehend. A soldier once applied some camphorated spirits of wine to his joints, to take away the pain ; and by this the morbid matter, being suddenly driven back, seized upon the abdominal viscera. The poor man grew immediately convulsed, lost his voice, and broke out into cold sweats, so that he was almost given over for lost : however, after giving him a pretty large dose of liquid laudanum, he threw up a considerable quantity of greenish bile ; then afterwards, by bleeding, and blisters applied to his legs, he was snatched, as it were, from the jaws of death ⁱ.

Seeing, then, that so many and various disorders are to be apprehended from the retrocession of the gouty matter, it is therefore very necessary to attend carefully to the signs that warn us when these mischiefs are to be apprehended. Such a retrocession of the gouty matter happened to Sydenham ^k ; and he observes, that it was presaged by “ a violent degree of sickness, with vomiting, and some little pain in the belly ; when, at the same time, the gouty pains all at once left the joints, which then could perform their motions with unusual agility.” When the joints suffer much from pain, it is a certain sign that the matter is deposited on these parts ; but it often happens, that the matter can by no means be deposited there, and therefore falls upon the *viscera*. In this case, however, I have always observed a sickness go before : hence it is prudent in physicians, when any sudden disorder attacks persons they know are gouty, always to have regard to this disease, and to irritate the parts that have been formerly affected, by frictions, fomentations, blistering, and every other way, to drive the wandering matter thither, which threatens

ⁱ La Cotte traite sur la goute, p. 98. ^k Tract. de Podag. p. 706.

tens to lay hold on the *viscera*. But such means are more particularly to be tried when a gouty person, not having had a fit for some considerable time, commits some manifest error in his way of living, or when the signs mentioned at §. 1257. appear, which shew that the morbid matter is at hand, and ready to exert itself, though it may not as yet be deposited upon the joints. “ We are to strive with all our might to divert this fiery colluvies towards the place it first occupied¹.” For, though the disease is attended with many and various symptoms, according to the diversity of *viscera* which are affected; yet no truce of ease can be depended upon, till a sharp fit of the gout be excited. By the most powerful efforts that I tried in the case of the gouty veteran above-mentioned, I could not excite a pain that was any way sharp, but only what was gentle, and of very short continuance; and at last, after relapsing twice, he died miserably, with a violent snoring, and with incredible anxiety and struggle.

Others, with whom I had better success, in the bitterness of their anguish poured out imprecations and curses upon me, wishing rather for death than to undergo such excessive torment; for the paroxysm is generally exceeding severe when the wandering gouty matter is once recalled again to the usual places.

All these, however, suppose the physician to know that the patient is subject to the distemper by hereditary taint or otherwise; but it happens sometimes, that the gouty matter existing in the body shall disturb the various functions, even before it has produced one regular fit at the joints. Thus we mentioned before at §. 1262. that a troublesome vertigo, and an epilepsy itself, were cured, on the first appearance of a fit of the gout, in persons who had never suffered from this disease before. I had occasion to observe, in a very fat person, formerly subject to nephritic disorders, a pain all about the left kidney, that was raised by the rude jolting of a carriage, attended with nausea, thin limpid urine, and an astricted belly: when

he lay down in bed, the pain increased, and hindered him from sleeping: after all the remedies had been tried, that used to do him service, as they imagined it to be the same disorder, in a few days the pain of a sudden removed from the loins into the toe of the right foot, and there introduced the first, and indeed a very sharp paroxysm of the gout. Nobody, I believe, in this case, imagined it to be the gout: the seeds however, not as yet germinated, (see §. 1257.) had certainly lain a long while unsuspected in the body.

This danger happens from an imprudent use of narcotics, &c.] Sydenham, instructed by his own sufferings, every where inculcates as a maxim, That pain is the only, though disagreeable remedy which nature employs to digest and dissipate the gouty matter, when derived to the joints; and assures us, that the more severe and painful the paroxysm is, so much healthier, and longer free from another attack, will the patients remain when it is over. All are not of so patient a temper as to bear these torments with firmness, which frequently indeed exceed all human patience; whence they are prone to try every thing that flatters them with the least hope of relief: hence they have an easy faith in strolling quacks, barbers, silly women, chemists, &c. who resort to every place where they know a rich gouty person is laid up in this condition; and hence all that farrago of remedies, taken from the animal, vegetable, and mineral kingdoms, which the goddess Podagra, in Lucian, so archly ridicules^m. Let any one but examine the list of remedies in Tral-lianus, at the end of the eleventh book, where he treats of the gout; and he will see how frivolous, useless, and superstitious they are. Words of no signification are to be graven on plates of gold, nor do they scruple to borrow the name of Jehovah to charm away the pain. Lucian long ago saidⁿ,

*Carminibus alius impostorum luditur,
Judæus nactus stultum excantat alterum:*

By charms t' allay the pain, some vainly try;
To Jweish incantations other fly,

In

In short, every thing has been tried to alleviate the disorder. Servius Claudius^o, when he was seized with the gout, “being no longer able to bear it, applied some poison to his feet, and rendered them so insensible, that he lived, ever after, as in a state of separation from these parts of the body.” Pliny relates the same of a Roman knight^p, viz. “That urged by the severity of the gout, he anointed his legs with poison, and ever after was deprived of all sense as well as pain in these parts of the body.” What kind of poison this was, we are as yet to learn: it seems however probable, that they took it from among the stupefying class. Hippocrates, speaking of the beneficial and hurtful qualities of cold, says, *Cold liquor, plentifully poured upon swellings in the joints, pains near an ulcer, gouty disorders, and convulsed limbs, considerably alleviates, lessens, and removes the pain: for a moderate degree of stupefaction removes every sort of pain*^q. Now we are to observe, that he does not say it is *always* alleviated, but only *considerably*, or for the greatest part; and that here he expected an alleviation only from a moderate degree of stupefaction. Aëtius^r informs us, that he had seen one labouring under what he calls the *bilious* gout, “who obtained extraordinary relief from immersing and keeping his feet some time in cold water.” But we have on another occasion remarked, when we spoke concerning the use of cold water in Palsies, and in opening the belly in obstinate iliac disorders, as also when we considered the means of checking a sudden and dangerous hæmoptoe, that persons after drinking cold water, or having it applied externally, grew generally hot when put to bed, and were greatly relieved by a plentiful sweat. Doubtless the very same may be expected, when people in the gout immerse their feet in cold water; for thus the gouty matter may be expelled.

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^o C. Sueton. de Illust. Grammat. cap. 3. p. 704. P Lib. xxv. cap. 3.

^q Tumores in articulis, et citra ulcus dolores, et podagricos affectus, et convulsa, hæc magna ex parte frigida copiose affusa et levat, et mitigat, doloremque solvit: moderatus nempe stupor dolorem solvit. Aphor. 25. sect. v. Charter. Tom. IX. p. 210.

^r Serm. xii. cap. 28. p. 321.

ed out of the body, by a copious sweat excited upon the part affected. And officer of foot, by the advice of a country villager, rubbed his gouty feet with snow, and by this means got rid of his pain; whence growing bolder, he ventured to accustom himself to walk a little way bare-footed upon the snow, and returned home quite free of pain; nor did the gout return for a whole year after, which at other times seldom stayed so long away^s. Snow, rubbed on the hands, every one knows, puts them afterwards in a heat; and this seems to have been the case here: besides, it must be observed, that this patient had been laid up for three weeks before, so that the matter might have had time to ripen, and thus could more easily be exhaled from the body. But that Aëtius^t expected such effects from cold and stupefying remedies, will appear from what he immediately subjoins in the same chapter. “ Yet in the
 “ use of these remedies our principal end must be, to
 “ take away the immoderate heat, which often may
 “ be done in the space of an hour: presently after
 “ this, a cataplasm of bean-flour, grease, and water,
 “ is to be applied: for when such remedies as stupe-
 “ fy, remain too long, they bring on a languid, doting
 “ sensation over the whole body: wherefore, in hot
 “ raging pains, when we are obliged to have recourse
 “ to stupefying remedies, we must afterwards che-
 “ rish the parts again with applications of a warmer
 “ nature.”

From the above, it is plain how ticklish Aëtius reckoned the management of such remedies. The morbid matter is without doubt very easily moved; and when driven back suddenly by such a degree of cold, or by the use of astringent medicines, may very readily lay hold upon the viscera, to the great danger of the patient; who can hardly have any hopes of escaping, unless this matter is properly recalled again towards the joints; and even then it commonly occasions much severer pains than before: so that, for the most part, much danger and little advantage accrues from having
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^s Pechlin. observat. physico-medic. lib. ii. obs. 28. p. 280. ^t Serm. xiii. cap. 28. p. 320.

recourse to such irregular methods of cure. I saw once a gentleman, of an active, stout habit of body, who, having applied a piece of ice cut to the shape of his gouty foot, rid himself indeed very soon of the pain; but in a little after, a filthy herpes broke out all over his face, and, taking possession of his very eyelids, occasioned the greatest uneasiness; from which I scarcely had got him free, when a very sharp fit of the gout quickly succeeded.

I knew another, who, having a very plentiful fortune, indulged himself daily in eating and drinking to excess, and by that means contracted a very sharp and painful gout. A certain plaster was applied by a quack, in the beginning of the paroxysm, to the part affected; from which, indeed, he received a very quick relief from the pain: upon this he insulted his own physician grievously, on account of his caution; and talked of nothing, from noon to night, but the virtues of this divine plaster, loading, besides, the quack with very liberal presents. The stroller in a few days went off, and hardly a month had passed when the gentleman was taken with a violent pleurisy: this being treated with proper care and efficacious remedies, he was, to all appearance, in a fair way of recovery, when he was seized with a fit of the gout, more severe and lasting than he had ever known before; the consequence of which was, that he never after had the use of his limbs, though he lived thirty years after this attack, in a very miserable condition.

Trallianus^u very judiciously makes the following remark: "For I do positively affirm, that neither
"astringents indeed, nor repellents, ought to be ap-
"plied to the parts affected; until the whole body is
"first cleared of recrements: for there is reason to be
"afraid, lest what flows into the joints should be dri-
"ven back towards the chief vital parts, at the risk
"of suffocating the patient, and bringing on death.
"Whether, therefore, you intend to make use of
"astringents or repellents, see that you make haste
"to clear the body first of recrements." Now it is
plain,

plain, by *recrements* he means the gouty matter which is derived to the joints. Sydenham^w also inculcates the same thing over and over, to caution us against the use of such remedies in the cure of this distemper; “ and that, from his long experience and observation, he could with confidence affirm, that the greatest part of those who have been thought to perish by the gout, owed their death, not so much to the distemper itself, as to the pernicious and improper method of cure.”

Or from medicines which weaken, &c.] In order to derive the morbid matter properly towards the joints, it is requisite to have our constitutional forces entire: hence it is, that in the vigour of life we find the paroxysms attended indeed with much sharper pains, but, *ceteris paribus*, much sooner over, and longer of returning, because the gouty matter is with sufficient force and expedition deposited at the usual places.

But when, either from the long continuance of the disease, the approach of old age, or whatever other cause, the strength begins to flag; then, though the pains are more tolerable, yet the fits continue longer, and become irregular, and during the intervals the patients are always languid, nay, their former degree of strength hardly ever returns. Whence Sydenham^x; although he advises, in general, a moderation to be observed in eating and drinking, yet condemns too great an abstinence, having found it hurtful in his own case, as well as in that of some others: and although he gave the preference to well-boiled meats before any other kind, yet he thought the patient's taste might be in this case consulted; “ because it is frequently found, that what the stomach earnestly covets, though of difficult digestion, does nevertheless digest better than what is esteemed of easier digestion, if the stomach nauseates it.” Nay, even during the time of the paroxysm, though he acknowledges a thin diet to be the best, yet he remarks, that some people cannot bear a total abstinence from flesh-meats, but grow languid, nay, sometimes are taken with

^w Tractat. de Podag. p. 598—601.

^x Ibid. p. 578.

with faintings. To these people, then, he allows flesh-meats, whenever the appetite seems much to desire them: always taking care, however, that such patients do not transgress in the quantity or quality of these meats; for, though the strength is to be supported ^y, yet the body must not be over-loaded with too great a quantity of aliment.

[Hence bleeding, vomiting, purging, &c. produce this effect.] As these, by evacuation, bring on weakness, (see §. 1270, 1271.) and do not reach either the matter, seat, or cause of the disorder; their use, therefore, by all means ought to be rejected, inasmuch as they lessen the powers necessary to digest and ripen the morbid matter, and to forward its deposition at the joints. Yet, when, by a dangerous metastasis, the morbid threatens to attack the lungs or brain, we are then, as we said before, to make use of evacuants; for of two evils in our option, the least is always most eligible.

Cataplasms, opiates.] Sydenham ^z expected little advantage from external applications. A poultice of bread and milk, with the addition of a little saffron and some oil of roses, he found preferable to any other; and even that did no manner of good in the beginning of a paroxysm: so that afterwards, paying no regard to such frivolous remedies, he for many years laid aside the use of external applications entirely. Neither did he ever administer opiates, but when the pain went beyond what the patient could bear; and thought it always much better to omit them. But this matter will be farther considered at §. 1278.

And so does the spontaneous weakness of decrepit old age, &c.] We have spoken already, at §. 55. of the changes which happen in the human body from old age. The vessels, for instance, grow together, and become callous: Hence all the functions depending on the free motion of the most subtile humours through the smallest vessels, will begin by degrees to be done away; while at the same time the other humours will degenerate into a cold phlegmatic depravity;

ty; until, at last, the circulation of the liquids fall solely to the share of the larger vessels, which at length are changed into a cartilaginous, nay, even a bony hardness, and thus can neither be any longer distended by the impulse of the liquids, nor of course have any reaction upon the liquids again; so that death must be the consequence of old age, even in people of the healthiest constitutions. Those in the last stage of old age are said to be decrepit, because human life used to be likened to a lamp, whose flame, for want of oil, being ready to expire, makes a crackling sort of noise; whence a lamp or light, ready to go out, is called in Latin *decrepita*: Hence old men, ready to expire through age, are said to be decrepit; hence too they seem to have expressed a glimmering or twilight by the word *crepusculum*. In this latter period of life, the vital powers are all languid; many vessels are entirely shut up; and the humours thickened, sluggish, and unfit for motion: hence we can neither expect a due concoction or maturation of the morbid matter, nor a proper derivation towards the joints because of their rigidity; whence there remains either a perpetual feebleness, or the morbid matter comes to be deposited on the viscera; and this must necessarily happen likewise, when the joints at the extremities of the body are so disordered, by the repeated attacks of the distemper, or the generation of tophaceous swellings, as to be no longer in a condition to give it admittance. This was mentioned before at §. 1260. where it was shewn how the disease spreads to other parts of the body.

Hence it is plain what kind of gout, and with what symptoms attended, &c.] Sydenham^a very justly remarks, that there is a great deal of difference in the gout, according to the period of life in which it first attacks. For when it makes the first attack upon a person worn out with years, the paroxysms are neither so regular, nor so cruelly painful, as when it invades one in the vigour of life. Such persons are frequently cut off by old age, ere the disease arrives at the

^a Ibid. p. 546.

the last stage; and they may indeed be said to die gouty, though their death is more justly to be ascribed to another cause.

But the gout, though with reason numbered among the most lasting diseases, nevertheless at last may bring on death. The symptoms that attend this last stage are described very skilfully by Sydenham^b. The paroxysms of an inveterate gout are drawn out to a greater length; and, excepting two or three months in summer, continue to infest the patient throughout the whole year: besides the pain, he suffers a kind of sickishness, with a total loss of appetite; his feet, at the same time, are never free from pain; and after eating there arise disagreeable, unfavoury belchings; the urine comes off limpid, and in large quantities; and he feels an itching in several parts of the body, particularly in the back, towards the time of going to bed; the tendons belonging to the muscles of the feet are also frequently seized with the most painful cramps. At last, “after a variety of torment, and a long exercise of torture, as a sure token that death is not far off, and ready to let fly his weapon;” the subsequent paroxysm gives him much less torment, but rather afflicts him with an uneasy sickishness, gripes, spontaneous lassitude, and sometimes a tendency to looseness. The more pain he feels in the joints, the more these symptoms disappear, *et vice versa*; and thus vexing and harrassing, sometimes with pain, sometimes with sickness, the lingering paroxysm spins out the time, and wears off at last by sickness, rather than pain. And so, “at last he happily exchanges a life of the greatest affliction, and which had nothing in it for a great while that could be properly called vital, for death, the reliever of every pain and every sorrow.” For now the strength insensibly decaying, the morbid matter can no more be discharged at the joints, the parts ordained to receive it being all obstructed, grown together, or destroyed: whence it is deposited on the viscera; and there occasions disorders the most sudden, dangerous, and mortal.

§. 1274. **T**HEREFORE the cure, which a due consideration of the disease and experience have directed, consists, *1st*, In restoring the strength of the viscera, (§. 1265.) *2^{dly}*, In carrying off the corrupted fluids still flowing in the vessels, or stagnating in the parts affected, §. 1262, 1263.

To cure a disease, one ought to have a perfect knowledge of its particular history, which cannot be obtained but by an accurate and careful observation of all that happens throughout the whole progress of it. When this is known, the curative indication may readily be deduced. If a disease is treated agreeable to this indication, and a considerable relief or a perfect cure follow, we may then be pretty certain, that the true method of cure has been pursued, and that it is confirmed by experience.

Now, the whole history of the gout shews, that excesses in the use of the non-naturals are the most frequent causes of it, and that a well regulated use of them may alleviate the disease even in those who have it from an hereditary taint.

It is moreover evident, that the gouty matter, during the time of the paroxysm, is either expelled out of the body, or changed in such a manner as to be perfectly harmless, seeing the body regains its former state of health, and the limbs their accustomed agility; as we see is the usual case in a gout that is regular, and not yet grown inveterate. Mean while, in such a person, who appears in all respects quite healthy, this same morbid matter is again collected in the space of some months; and being again deposited at the joints, renews the paroxysm. Hence physicians of skill have employed their thoughts on a method to prevent the causes of a future paroxysm, and thus hinder it from being again produced. Here all acknowledge a well-regulated and proper diet to be of the greatest service. But the choicest aliment whatever requires so to be changed, by the action of the viscera, as that it may easily

easily be assimilated to the nature of our solids and fluids: for if the action of the viscera is not of sufficient force to subdue what is taken down, the last and finest elaboration of all cannot take place; and so there must something faulty and defective remain in the body, as we before observed at §. 1265. This latent taint may likewise be so subtile, as not to discover the smallest mark of its existence in the larger vessels and grosser humours (see §. 1267.) having its residence only in the finest nervous liquid, that, I mean, which is produced by the last and highest degree of elaboration. Now it appeared at §. 1262, 1263, that a depraved state of the finest liquids, and the vessels thro' which they pass, was to be reckoned as the proximate cause of this distemper. But when this depravity is once accumulated, or rendered still worse by stagnating in the body, then it is fitted to excite a new paroxysm, by which the depraved taint is either gradually dissipated, or forcibly expelled out of the body. Whence they endeavoured to restore fresh vigour to the viscera, in order to obtain the most complete concoction and assimilation of all the humours: And if any kind of depravity had already taken place in the finer liquids, and, mixing with the other humours, accompanied them in their circulation through the vessels; or if it was already deposited on these places which it usually infested during the time of the paroxysm; this they tried by all methods to take away. On these two points turned the whole cure of the gout. Whence Aëtius says ^c, “With regard to the cure, therefore, we must have a twofold end in view: the evacuation of the redundant humour, and strengthening the parts that are weakened.” Sydenham ^d, after having collected all the phænomena of the distemper, and considered each with strict attention, concludes, that in the cure of this disease, there are two causes that we have principally to encounter. “The first is the antecedent cause, or an indigestion of the humours, arising from a deficiency of heat and native spirits: the second is the containing cause, or a

VOL. XIII. N “heat

^c Serm. xii. cap. 12. p. 315.

^d Tract. de Podag. p. 566.

“ heat and ebullition of the same humours, having
 “ now acquired a degree of corruption and acrimony
 “ from being retained too long in the body ; the cause
 “ of which retention depends upon the aforesaid de-
 “ ficiency of concoction.” However, he very judi-
 ciously remarks, that the remedies calculated to sub-
 due these two causes are, in their nature, entirely op-
 posite to each other ; so that what, in one of these
 causes, shall be of the greatest service, will be of the
 greatest prejudice in the other. And this he thought
 constituted one of the principal difficulties in curing
 the gout : for those things that were of service in as-
 sisting digestion, did harm by their heating qualities,
 in rendering the morbid matter more active and out-
 rageous ; and, on the other hand, those which served
 to refrigerate, and blunt the acrimony of the humours,
 were of manifest injury in weakening the viscera. Be-
 sides, he thought that the morbid matter, during the
 time of the paroxysm, was very rarely found to be ex-
 pelled altogether out of the body, so as no remains
 should stay behind ; whence he was afraid, lest these
 morbid remains should be put in agitation by such
 things as restored the functions of the viscera, and
 either produce a new paroxysm, or, what is still more
 dangerous, be driven into the viscera themselves ;
 “ since the elimination of the contained matter is en-
 “ tirely the work of nature, to be brought about after
 “ her own manner of working alone^e.” However,
 the chief intention of cure he places in this, “ To for-
 “ ward concoction, by taking away the causes of in-
 “ digestion^f.”

But if we consider the gout as a disease proper to
 old men ; and that the functions of the viscera, at this
 time of life, begin to grow languid ; and that some-
 times even these too are still more weakened by other
 chronic disorders preceding or accompanying the dis-
 temper ; we shall see another very good reason why it
 is so difficult to cure. Yet Sydenham^g advises, “ as
 “ far as the strength and years will admit, to attempt
 “ a cure ; and in proportion as the patient approaches
 “ or

^e Ibid. p. 567.^f Ibid.^g Ibid. p. 557.

“ or is distant from this standard, so has he more or
 “ less chance of escaping from the tyranny of the
 “ distemper.”

Let us then see by what remedies, and with what caution, we are to proceed in obtaining this twofold scope, or intention of cure.

§. 1275. **T**HE *first* intention of §. 1274. is obtained, 1. By aromatic, bitter, and antiscorbutic plants, chiefly taken in substance, mixed with honey. 2. By lixivial fixed salts, taken for a long time, in small doses, frequently repeated. 3. By nourishing meats and drinks, that are light and of easy digestion. 4. By hard and long continued riding in a pure country air, by frictions, and by moving the parts frequently. 5. By a great deal of seasonable sleep.

It is necessary that we now consider those remedies which are expected so to restore the vigour to the viscera, as shall answer the end of the *first* curative indication in the foregoing paragraph.

1. Seeing the *primæ viæ*, or what are called the viscera of the first concoction, act in a particular manner upon the aliments; and that not only by their own proper power and efficacy, but also by the plentiful effusion of humours, which have already attained the nature of a human liquid, so changing them, that, having almost put off their own primitive nature, they approach nearer to the nature of the fluid and solid parts of our bodies; those remedies have been therefore held in the greatest esteem, which could increase the action of the stomach and intestines upon the aliments, so as to obtain from them a proper quantity of good laudable chyle, to be afterwards converted into blood, from which all our other humours are discerned. But as the chylopoietic viscera act not only by containing, retaining, and gently pressing the aliment; but also by the affusion of necessary humours, among which the bile is thought to be of the greatest efficacy; therefore, such remedies as have a grateful aro-

matic stimulus, and at the same time a bitterness like that of bile, have been in the highest request: for thus the viscera are irritated into a brisker motion; and if the bile should have lost its proper degree of acrimony, the bitterness of the remedy corrects that inconvenience: whence all bitters, that are not purgative, in every age have passed under the appellation of *stomachics*; and because gluttony and surfeiting, which disturb and weaken the places of digestion, give rise so often to the gout, these medicines are therefore considered as every way proper in this distemper.

These bitter remedies we have recommended on another occasion, when treating of Chronic Disorders, §. 1051. No I. 4. in the cure of excessive fatness, to supply the scarcity and want of acrimony in the bile. But Galen^h, as we have there observed, recommends “the seeds and tops of rue, especially of the wild fort, round birthwort, lesser centaury, gentian, polymountain; and especially those plants which are remarkable for provoking urine, as parsley.” He remarks at the same time, that the same medicines are used by some people in arthritic disorders. They are administered either singly, or mingled in certain proportions together.

But we find that these very remedies, or something very like them, have been for a long time given in the gout, and sometimes sold at a very high price. Tral-lianⁱ describes the like antidotes, which he advises to be taken a long time, sometimes for six months, and even a whole year together; omitting however some days, only now and then. Aëtius^k recommends something of the same nature, and among the rest the tetrapharmakon, composed of four ingredients, namely, gentian and birthwort roots, bay berries, and myrrh, of each equal parts. At present the theriaca diates-faron of the shops, is no other than the powder of that name, mixed up with a triple quantity of honey, and reduced to the form of an electuary.

Almost all however agree in this, that such remedies,

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^h Meth. Med. lib. xiv. cap. 15. Charter. Tom. X. p. 335. ⁱ Lib. xi. cap. 1. p. 616, 618, 650.

^k Serm. xii. cap. 47. p. 352, 353.

to reap any benefit from them, must be continued a very long time. Hence Aurelian ¹ calls them *annalia*, or medicines of a year, because they are to be taken for a twelvemonth together; “but if not, the number of days they have been taken are to be reckoned till they make up a year complete, though the time from the first beginning should extend much beyond that space.” Yet they do not seem to have ascribed much intrinsic efficacy to these remedies, but rather to have believed the regularity of diet, more particularly observed at this time, to be chiefly instrumental in the cure of this disease.

It is however certain, that such remedies are of real service in restoring vigour and strength to the viscera; and so far, therefore, may very well answer the end of this indication. At the same time, it cannot be denied, but that they have been of real benefit to many, though perhaps not to every gouty person. When a remedy of this kind became famous in England, for the great success it had upon the duke of Portland, who had been several years afflicted with a hereditary gout, Doctor John Clephane ^m, an eminent physician of London, compared the ingredients of this medicine with those which were to be met with in the ancient books of physic, and found the powder called Portland powder to be the same with the *diacentaurius* of Cœlius Aurelianus, as also with the antidote of the two kinds of centauries described by Aëtius.

The form however of this Portland powder is as follows:

Rad. aristolochia rotundæ,

— *gentianæ,*

Summit. chamædr.

— *chamæpityos,*

— *centaur. (min.)*

ana. part. æquales.

“Of roots of round birthworth,

“ — gentian,

N 3”

“Tops

¹ Morb. Chronic. lib. v. cap. 2. p. 562, 563.
et Inquir. Tom. I. p. 126, &c.

^m Med. Observ.

- “Tops of germander,
 “ — ground pine,
 “ — lesser centaury;
 “ Each equal parts.”

Which, when dried, must be reduced to a powder, a drachm of which is to be taken in a little wine, water, broth, tea, or any vehicle, in the morning, upon an empty stomach, the patient taking nothing for an hour and a half after. It is to be used in this manner, without interruption, for three months: then three fourths of a drachm is to be taken the three months following; half a drachm is to be taken every day, for six months after; and the year following, it is sufficient if the same quantity be taken only every other day. He remarks at the same time, that it is two years sometimes complete, before any remarkable amendment is to be observed in the disorder; and advises the patient at the same time not to be discouraged, by the length of time, from taking the remedy, even though the good effects of it should not immediately appear.

Lucian^a also seems to have had his eye upon these sorts of compositions, when he makes the goddess Podagra recount the various remedies by which her wretched sufferers endeavoured to overcome the *Invincible Mistress of Pain*.

*Bibunt alii de quatuor rebus pharmacum,
 Sed octuplex alii, septemplex plurimi.*

Some drink a diet-drink of four ingredients,
 Another chuses eight, another seven.

Sydenham^o, after having considered all the various methods of cure, held those remedies in the highest esteem, “which by their gentle warmth and bitterness strengthen the stomach, and give more life and firmness to the mass of blood.” To the bitter and strengthening remedies he adds what are called the anti-scorbutics, such as the horse-radish, scurvy-grass, water-cresses, &c. and gives an ample catalogue, out of which such sort of medicines may be variously prepared:

^a Tom. III. p. 654.

^o Traſſat. de Podagra, p. 568, et ſeq.

pared : For as they do not act by any peculiar specific virtue, but only in general by their warming and moderately strengthening qualities, therefore he was for having only such things pitched upon as should be most agreeable to the patient's liking ; “ for since “ it was necessary to persevere a long time in the use “ of these remedies, even through the whole of life “ almost, it was fitting the ingredients should be as “ little disagreeable to the patient as possible ^p.” He remarks at the same time, that the Peruvian bark holds the first rank among strengtheners ; and on that account advises some grains to be taken every morning and evening.

However, though he otherwise finds no fault with the particular formulas of these remedies, yet he prefers the form of an electuary to all others : these ingredients then are to be reduced to a powder, and, with the addition of sack and clarified honey, made up into the consistence of an electuary ; two drachms of which he orders to be taken in the morning, and as much at night. Nor was it in the gout alone he expected to find benefit from these sorts of medicines, but even in many other chronic disorders also, “ seeing every disease of this kind may be referred to “ the same cause ; to wit, an indigestion of the humours ^q.”

In the *Materia Medica* those simples are highly recommended, as proper to be ranked in this class, which were said, at §. 1233, to be excellent in the dropsy ; all of them being either aromatic or bitter, and, the *gratiola* of the Germans excepted, none of them having the least tendency either to purge or vomit. When this little plant, however, which is exceeding bitter, is added only in a very small proportion, it can hardly raise any disturbance or commotion, but may by its bitterness improve the other ingredients. It is to be observed in the mean time, that hot remedies may be administered in the dropsy, which is a very cold distemper, in far larger doses, than sometimes it would be proper to give in this distemper ; therefore a less

fer quantity of the medicine may perhaps answer, should it be more agreeable to the patient's taste to have it by way of infusion in wine or ale. But the best form of all seems to be the powder of these simples; either taken by itself; or made up, with honey, into the form of an electuary: for the effects of these simples will be more gentle and lasting, when gradually diluted by the afflux of humours into the stomach, as well as by a draught of broth or any other liquid above it, and thus by imperceptible degrees infusing their medicinal virtues to the stomach and intestines.

But although the use of such remedies, in this distemper, seems in general to be pretty safe, yet we cannot deny, but that in some particular cases it has not been so successful; and for this reason, that the gouty matter, not being deposited at the joints as usual, has been driven into the substance of the viscera. A remarkable instance of this was observed by the celebrated Gaubius^r. A person, he says, about forty years of age, of a very bilious habit of body, had been long afflicted with the gout, though he lived always regular, and was in other respects healthy enough; and notwithstanding the disease was not so very severe, yet wearied, and willing to get rid of it, he took every day a dose of the celebrated Portland powder, for the space of about eighteen months; with this effect, that he kept altogether free from his usual paroxysm: but then a difficulty of breathing came upon him, and every day increased; so that, in a few months after, he could hardly stir without panting for breath; even speaking increased the symptom: he had, besides, a dry cough; his body looked pale and discoloured; a slight œdematous swelling was observed in the hands and feet, and under the eye-lids; his tongue appeared white and dry; he was exceeding thirsty; had a full slow pulse; made a great quantity of clear, insipid urine, like water; his skin was dry, without perspiration or sweating; he had scarce any appetite, and slept but little; and though he could lie on either side, yet his head behoved to be raised: After having tried
many.

^r Hollandsche Maatschappye, Tom: IV. p. 308; et seq.

many remedies to little or no purpose, he at last died suddenly. Upon opening his body, nothing was to be seen in the abdomen, to which his preceding disorder or sudden death could any way be attributed. In each cavity of the thorax was contained about twenty ounces of *serum*. About a third part of the lungs was of a natural softness and colour; and when cut through, some blood ouzed out: but the rest of the pulmonary substance, especially towards the inferior part, being of a whitish, collapsed, skinny appearance, contained within it several small tubercles, about the bigness of common peas; and when cut through with the largest incision, did not emit the smallest drop of blood; but, upon a gentle pressure, sent forth some viscid, greenish-coloured serum. When the tubercles were opened, they contained nothing purulent, but a glary, thick matter, much akin to what is found sometimes in the gouty *tophi*.

From all which it seems reasonable to conclude, that the gouty matter, which formerly used to be deposited at the joints, was, by taking this antidote powder, discharged upon the lungs, and thus was the real occasion of his disorder and death; and therefore it is plain, that remedies of this sort cannot be administered with safety to all gouty patients indiscriminately. The ancient physicians have very long ago judiciously remarked this very thing. Galen, where he is recommending such remedies as are commonly given in arthritic disorders, for the cure of excessive fatness, says, *And many, of a moderate and slender habit of body, have lost their life by drinking potions composed of such kind of remedies, their blood being entirely dried up. But what hurried them to take them, was the seeing many in arthritic illnesses recover by their use; not at all considering, that the habit of those persons who had been cured, was more of a humid and phlegmatic kind: such, for instance, are most of your fat people, to whom medicines of this sort may be administered with great safety*. Aëtius, recommending

§ Multique, cum vel gracilioris vel mediocris habitudinis essent, ex ejusmodi medicamentorum potione perierunt, sanguine ipsorum exco-

recommending the tetrapharmacon afore-mentioned, as a preservative against the gout, subjoins this caution: "It is of great service to people of a phlegmatic habit, but hurtful to those of a bilious kind^t." However, he describes a remedy much a kin to the celebrated Portland powder, under the title of an "antidote of the centauries^u:" A drachm of which he gave every day in warm water, for forty days together; then every day of the remaining three hundred and twenty, which complete the year, he gave only half a drachm. "Yet it is to be ranked among the most celebrated remedies, and those that have performed the most extraordinary cures, as I, from my own experience, can testify, having known many who owed their safety to its use entirely: for it is so very salutary to gouty people, that some, who have laboured for fifteen years together under this distemper, by the use of this medicine have regained the power of their limbs, so as to be able to perform a journey." But as to these, and such-like warming remedies, which are required to be taken for a great length of time, Ægineta makes the following remark^w: "Those, however, who attempt thoroughly to remove the distemper, by giving such medicines as are drank for a whole year together, will certainly do service to many whose joints are infested with pituitous and excrementitious humour; but as to persons of a hot, dry habit of body, these they will hurry on to sudden death, because the matter in these cases is forcibly driven upon the intestines, kidneys, breast, lungs, or some other principal bowel." Aurelian also makes pretty much the same remark^x.

It is therefore evident, that though the ancients have highly recommended such remedies in the cure of the gout, as contribute to strengthen the powers of the
viscera,

to. Ruerant autem ad ea propterea, quod liberatos aliquos articulis affectibus viderant, minimæ æstimantes, quod temperies eorum, qui sanati fuerant, humidior, pituitosiorque erat, qualis nimirum obesorum est, in quibus hujusmodi medicamentorum securus est usus. *Method. Medend. lib. xiv. cap. 15. Charter Tom. X. p. 335.*

^t Serm XII. cap. 47. p. 352.

^u Ibid. p. 353.

^w Lib. iii.

cap. 78. p. 58. versa.

^x Morb. chronic. lib. v. cap. 2. p. 563.

viscera, yet they have at the same time subjoined very judicious cautions, which, if they are not properly observed, and medicines of this kind are given in every case without distinction, the greatest mischiefs may very often be the consequence. In the case of that person, whose history we have quoted from Gaubius, a prudent physician surely would not have advised the Portland powder, when he saw that he was of so bilious a habit of body.

For the sole end of giving these kinds of remedies is, that, by restoring the powers of concoction, a smaller quantity of the gouty matter may be generated; or, when generated, be forthwith exhaled, before it has time to be deposited, or as it were immoveably fixed, in certain particular places of the body. It was before observed, that persons long afflicted with an inveterate gout are generally languid and sickly through the whole year almost, and that any little health they enjoy is in the summer months alone. But Sydenham remarks^y, “that the warm kind of plants do great service, as they impart the summer’s heat to the blood in the very middle of winter.” Yet he says^z, “That, if we accustom ourselves to their use in summer, we shall be better guarded against the inconveniencies of a severer season.” In another place he advises to renew the use of these remedies, during the intervals between each paroxysm; at the same time to let it be as far removed from the next-expected paroxysm as possible: because, when the fit is well worked off, there is but little matter remaining; and then they may be more safely given, with a view to hinder the accumulation of the matter, by fortifying and strengthening the viscera. For Sydenham^a was far from expecting that the gouty matter, when once accumulated, could, by these remedies, be either corrected, or more successfully deposited at the usual places, “seeing the elimination of the contained matter was the work of nature entirely, and therefore by her own method alone was it to be performed:” and he advises at that particular time strictly to avoid all heating aliment,

or

^y Tractat. de Podag. p. 575. ^z Ibid. p. 578. ^a Ibid. p. 567.

or such medicines as are apt to inflame the humours.

But since old persons, and those who are advanced in years, are more frequently afflicted by this distemper; and as that time of life can bear the use of warm remedies better; to such, therefore they may be given with greater safety. In the vigour of life, and in such as are of a warm, sanguineous, or bilious habit, there is more caution necessary; and prudent physicians usually prescribe remedies of a milder kind, lest they should add fire to flame, and by that means put the whole body in commotion. Whence also Lobb^b, recommending the moderate use of wine and spices, such as cloves, mace, &c. as a preservative against the gout, by increasing the force and firmness of the heart and arteries when feeble or languid, adds, “as frequently is the case, in some sort, with gouty constitutions, and almost always so with such as are of a chilly habit, and those whose flesh is flaccid, and whose vessels have too great a degree of laxity.”

2. It was before shewn, at §. 1263. that, in this distemper, the finer liquid is faulty, in being either too acrimonious, or too viscid: whatever, therefore, has power to attenuate this viscosity, must be in this case very proper; most of all so, if at the same time, having no effect in augmenting, it rather serves to diminish, or entirely correct, the acrimony that accompanies this same viscosity. But seeing the improper use of acids, as was said at §. 1255: has been justly numbered among the causes of the gout, the reason is plain, why lixivious and alkaline salts have acquired so much reputation in the cure of this disease: whence our celebrated author^c says, “That the kind of gout, which is produced from too great a quantity of acid, cannot perhaps be more successfully cured, than by this salt, taken in small doses, and long-continued:” for then it dissolves the tenacity, and also takes off the predominating acrimony. In the mean time, however, as all our humours tend naturally towards putrefaction; and so much the more, indeed, the

^b De Calculo et Podagra, &c. cap. 21. p. 252, 253.
Chem. Tom. II. p. 59.

^c Elem.

the higher degree of elaboration they have gone thro'; the gouty acrimony, therefore, is not always of the acid kind. The chyle moving along with the blood in the vessels, and being separated in the breasts, obtains the name of milk, which spontaneously turns acid: but continuing to be further circulated through the vessels, it is at length, by the repeated action and influence of the viscera, so changed, as to have no longer any tendency to become acid; but, having thoroughly acquired the disposition of the other humours, tends naturally, in the same manner, towards putrefaction. But as the gouty acrimony was thought to be joined to that highly-refined fluid after it had undergone the last degree of elaboration (see §. 1265.) it does not appear at all likely that this acrimony belongs to the class of acids, especially when a diet of the acescent kind is known to be so often beneficial to gouty people, as shall afterwards be shewn.

We are however to take notice, that, in the gout, a fault may lie in the indigestion of the viscera, they not being able to assimilate the aliments to the nature of our fluids; and thus the acrimonious acid of our food cannot be so properly diminished and weakened, or yet so thoroughly subdued by the admixture of sound, perfect, animal humours, as commonly it is in the highest degree of good health. But though this depravity of the humours is of a nature so light and subtle as not to affect the larger vessels, yet in the smallest it may do considerable harm; especially when that, which before was dispersed, comes now to be collected, and begins to fix itself in certain parts of the body. It is however certain, that this acrimony, arising from an imperfect concoction of acid and acescent aliment, is by no means so universal a cause of the gout as some would maintain. Whence the celebrated Boerhaave^d, to the praise he bestows upon the fixed salts, prudently subjoins the following: “ Yet, notwithstanding this, we are not to cry it up all at once as an universal antidote against the gout; for it is of the utmost prejudice to persons of a very
Vol. XIII. O bilious

^d Ibid.

“ bilious habit, whose humours already tend to an
 “ alkaline putrefaction.” But when a physician carefully attends to the nature of the disease, the antecedent causes, and the present condition of the patient, he will not so easily mistake in determining the utility or disadvantage of these remedies.

Fixed alkaline salts are certainly very acrid, in so much as, when applied to the skin, to erode it, and produce gangrenous crusts^e. But they are still more so, in proportion as they undergo a fiercer degree of heat. Whence a milder kind may be exhibited, such as those prepared after the method of Tachenius^f. When, for instance, the green plants are burnt to a deep blackness, not in a blazing, but in a smothered heat; and then, being put into an open fire, begin to sparkle without flaming, and are converted into ashes; these, when boiled in water, yield a brownish sort of alkaline salt, which is much milder, indeed, than that which is procured from the ashes of plants burnt in a strong flaming heat.

Hence too appears the reason, why small doses and a long-continued use of these salts are so much recommended, as acting, no doubt, with a gentle dissolving power, and attenuating every kind of viscosity, yet not with so great a degree of acrimony as to occasion any harm: therefore, when prudently used, they may be of service, even in cases where there are no apparent signs of acrimonious acidity in the humours; especially seeing we learn from the experiments of the celebrated Dr Pringle, that putrefaction is not so much forwarded by these salts, as indeed we formerly imagined.

Among this class of remedies in the *Materia Medica*, the alkalest Glauberi stands much recommended; which is nitre, converted into an alkaline salt, and dissolved *per deliquium* in the open air, commonly known in the shops by the name of *liquor nitri fixi*; and the safest method of exhibiting this, is by giving a few drops in some veal broth every morning. Another remedy of this kind is prepared from broom-ashes, infused in Rhenish wine; half an ounce of which li-

quor

^e Ibid. p. 54.

^f Ibid. p. 48.

Quor is to be taken every day, in the morning. The broom-ashes contain an alkaline salt, but the acid of Rhenish wine breaks the force of the alkaline acrimony; and both united constitute a kind of *tartarus regeneratus*, whose mild nature and great dissolving power is so well known to every one: whence, if a physician should have the smallest scruple lest the alkaline acrimony prove injurious, he may always use this medicine with the greatest safety.

Hoffman^s says, that he has observed very great relief in the gout, from the use of absorbent earths and fixivial salts, and particularly in cases where the acid vomitings prevailed: he therefore greatly recommends to gouty people the use of the Caroline baths, which contain a considerable quantity of alkaline salt.

3. As the proximate cause of this disease (see §. 1265.) may depend upon the powers of the viscera being too weak to digest and assimilate the aliments; and seeing it is certain that some aliments require the action of the strongest viscera to subdue them, whilst others again by a far less degree of vigour in the bowels may be so changed as easily to acquire the disposition of our fluids; it is therefore very evident, that great regard ought to be had to a proper diet, in order to promote the alleviation, or even cure of the distemper: thence all physicians have recommended mild, light food, of easy digestion, and liquors of the same nature, that nothing acrid might be taken down, and so by way of caution lest any greater degree of acrimony should be generated in the humours of the body by a spontaneous depravation of the aliment.

Many place so great a confidence in a vegetable diet, as to exclude from the table all kind of animal food whatever. The celebrated Lobb^h mentions some cases, where, by the sole use of such a diet, the patients not only kept free from the gout, but their gouty tophous swellings, wearing gradually away, at length entirely disappeared. Yet they were sensible of many inconveniencies from this regimen: their flesh fell

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away,

§ Med. Rat et System. Tom. IV. parte ii. sect. 2. cap. 11. p. 548.

^h De Calculo et Podag. &c. cap. 20. p. 215, &c.

away, and their strength was very much weakened; and afterwards, notwithstanding they abstained entirely from wine, yet, if they tasted ever so little of flesh-meat, of whatever sort, they were sure to have a return of the disorder; insomuch, indeed, that in one case particularly it seized on the patient's left hand and wrist, went down to the elbow, and four days after laid hold on both his feet, and for seven days and nights the pains continued intense and extremely violent. Whence we see, that although the gout may be lulled asleep a long while, yet a change of diet brings back the paroxysms with all their severity. From a consideration of all which particulars, the sagacious Sydenham concludes; " That a vegetable diet, by itself, is not so
 " nourishing and strengthening, as when mixed with
 " something of the animal kind; and therefore animal
 " food is not only beneficial, but sometimes entirely ne-
 " cessary." for the strength must be supported, for the sake of performing bodily exercises, which greatly contribute to getting the better of this malady, as we shall afterwards shew in the following number. At the same time it would appear, that a vegetable diet does not by any means remove the predisposing cause of the gout; seeing that, upon a change of living, the distemper returns: however, it seems to weaken the force of the morbid matter, as the paroxysms are either altogether diverted and soothed away, or, should they return, they are neither so severe, frequent, nor lasting. But perhaps it may be asked, whether the gouty disposition itself, or *character*, as Helmont calls it, can be entirely destroyed by a long and determined course of this kind of diet? Certainly the examples we have already mentioned above are strong proofs that some have regained entire health, merely by being reduced to suffer the hardships of poverty, and by daily labour to gain a spare sustenance consisting almost wholly of vegetable fare. We read of another instance of the same kind^k in a man, who, being cast into a filthy prison, subsisted nineteen years on bread and water alone, and lived afterwards in good health, and entirely

i. Ibid. p. 222.

k Ramazzin Oper. p. 478.

entirely free from the gout, from which he had been used formerly to suffer the most cruel attacks.

We rarely find persons who have the resolution, or indeed are really able, to go through a course of this sort of diet for many years. And seeing the greatest part of gouty people live high, giving too liberal an indulgence to all their appetites, a change of this kind, so sudden, may be attended with some degree of danger. Whence Lobb^l very judiciously advises those who have a mind to try this method, “not to begin it suddenly and all at once; but by degrees to lessen the quantity of animal food every week, by little and little; allowing themselves, for this purpose, three months time, that, when these are elapsed, they may bear a total abstinence from all kinds of that sort of food whatever.” Whence also he advises people, who cannot by any means abstain altogether from flesh-meats in this disorder, at least to diminish the quantity considerably, and by degrees, so as to come at length only to take about eight, six, or four ounces of flesh-meat to dinner, till such time as vegetables shall compose the greatest share of their nourishment.

We may therefore conclude, that a diet of vegetables is of great service in this distemper, however patients may not sometimes be either really able or willing to subsist on it alone. It is certain, that a plentiful use of melons, and other summer-fruits, has not been attended with any harm, even in the very worst and most inveterate cases^m; “constant experience rather proving that such things moderately used, and proportioned to the eagerness of the patient’s appetite, never fail to allay the fervour of the blood, and to restrain the excess of perspiration depending on that symptom.”

Sydenham, from the experience he had in himself, as well as from what he had observed in others, has given us very good rules with respect to diet. Two things he warns us to avoid: first, The cramming

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down

^l De Calcul. et Podag. cap. 22. p. 279.
&c. p. 9.

^m Hahn. Histor. Podag.

down a load of victuals, which, as they cannot be properly subdued by the stomach, must occasion those crudities so much to be apprehended; next, Too strict a kind diet, which, by weakening the strength, does as much harm in another wayⁿ. However, although he allows that some meats are to be preferred to others, as being of easier digestion; yet he rightly advises, that particular regard be had to the patient's taste and liking; it being very certain, that things, to which they have a strong inclination, are by them much sooner and easier digested. Thus it is plain, that some regard must be had, even here, to custom and habit; but as to this particular we have already said enough, where we treated of Fevers. In the meantime, should the patient's appetite give him strongly to things of more difficult digestion, all we are to do is to allow him a smaller proportion. At the same time Sydenham recommends only one species of flesh-meat at a time, "as different sorts of flesh-meats, taken down at a meal, occasion more disturbance in the stomach than any one kind by itself, though in quantity it should even equal all the rest put together." Besides, it often happens, that a variety of dishes provokes the appetite, even beyond satiety; especially when that hunger, which had already been sufficiently appeased, is again stimulated by the relish which a skilful learned palate finds in sharp, salt, and high-flavoured seasoning. Hippocrates has said, *But the method of this kind of diet may be bad two ways: first, When any one allows the patient to take down more meats than he can bear, without balancing the quantity of victuals with a due proportion of bodily exercise; and then, When he throws down various kinds of meats, quite different in their nature from each other; for things opposite in their nature occasion much commotion in the stomach, some being sooner, and others more slowly digested.*

Since,

ⁿ Tractat. de Podag. p. 578, et seq.

o Est autem ejusmodi prava victus ratio: primum quidem, quum quis copiosiores cibos, aut liquidos aut siccos, exhibeat quam ipsum ferre possit, neque laborem ullum ciborum copiarum opponat: deinde, quum varios et dissimiles inter se cibos immittat: dissimilia enim seditionem excitant, et alia citius, alia tardius, concoquantur. *Lib. de Flatibus, cap. 3. Charter. Tom. VI. p. 215.*

Since, therefore, labour and bodily exercise, as we shall presently shew, are of so much benefit to gouty people, a requisite degree of strength for that purpose ought always to be kept up by a proper nutriment: hence too delicate and choice a diet may rather prove hurtful. They are, therefore, to be contended with plain food, abstain from too great a variety of dishes, and eat only what hunger requires. It would be well too, if, according to what has been already said, the quantity of mild greens and ripe fruits should exceed what is taken from the animal classes. Sydenham^P enjoins gouty people to content themselves with a dinner only; and, in place of supper, to take a plentiful draught of very small beer; that is, if they are accustomed to this sort of liquor; with this view, in particular, to prevent calculous concretions in the kidneys, to which gouty people, by reason of their being long confined in a lying posture, are very much subject: for the urine, by thus drinking largely of smaller thin liquors, is secreted in greater abundance, and washes away every thing which is ready to harbour about the kidneys.

Milk, *omnium rerum quas cibi causa capimus, liquentium maxime alibile*^q, “of all liquids that we take by way of sustenance, the most nourishing,” has been much extolled in the cure of the gout. It is an aliment of a middle nature, as it were, between the animal and vegetable kingdoms. It contains a soft oil, which, when freed from the other parts, is called *butter*; a thin serum, or whey, which spontaneously turns sour; and a cheesy part, which, when well separated from the rest, comes nearest to the nature of an animal substance. Milk certainly has in it every quality requisite for nourishing; and yields a very useful and proper nutriment to infants and weakly people, for this reason, Because it is no other than the chyle of a healthy animal, so far elaborated by the *viscera* and vessels, as to come nearer to the nature of our own humours. There are a number of observations which shew that

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P. In loco modo citato.

q Varro de re rustica, lib. ii. cap. 12.

a milk-diet has been of great service to gouty people, and has even kept them entirely free from all paroxysms while they continued to live on it alone. But yet we do not find that it destroys the latent predisposing cause of the gout itself. For a milk-diet is then only of sovereign benefit, “when the patient deviates not in the smallest particular from a strict adherence; for the moment any one, who is once accustomed to this, partakes in the least of the diet of other healthy people, be it ever so mild and light, the gout returns immediately, and afflicts him with much more severity than ever^r” because this soft milk-diet, requiring only a slight degree of strength in the bowels to digest it, enervates the force of the chylopoietic *viscera* so much, that when they return to the food of other people the solid meats cannot be so easily subdued, and of consequence the gouty matter must be accumulated, as we have already seen at §. 1265.; for few have resolution enough to keep steadily to a milk-diet through the whole of life. Besides, if they had all the inclination imaginable, there arises sometimes so great a dislike and loathing of milk, that they are forced in spite of themselves to leave it off; as Sydenham very well remarks^s; and I myself have sometimes had occasion to see. For which reason Dr. Mead warns old people in particular, and such as have suffered a great many fits, against a strict diet of milk and greens: for he had observed, “that if the gout kept entirely off, the parts about the præcordia were sure to be infested, instead of the joints; besides, that they lost all the use of their limbs, and remained in a miserable condition all the rest of their lives.” But young persons, he thought, who had suffered only two or three fits, might try this regimen; though he chiefly recommends it to those in whose family the gout is hereditary: and even then he does not advise a strict milk diet; for he allows them once a-day white meats, and sometimes freshwater fish, but excludes the use of all wine and ale.

By

^r Sydenham de Podag. p. 579.
et præcepta medica, p. 202.

^s Ibid. p. 580.

^t Monita

By this manner of living, he says, he has seen several arrive to a very healthy and pleasurable old age: and the same effects, from a moderation of this kind, I myself have also seen; insomuch, that the patients were either entirely free, or touched only with a slight paroxysm once in two or three years. The same kind of diet is also recommended by Coste^u, the utility of which he had experienced in his own case.

Notwithstanding there are very many authors who recommend water alone for common drink, yet all are not of the same opinion with regard to a strict observance of this regulation, though every one is agreed that a life of sobriety must be observed in order to hope any considerable relief from the distemper. Very many, without doubt, after a hard excessive drinking-bout of wine, have been attacked by the distemper: whenever these persons, however, have been all at once condemned to the use of water, it is seldom long of proving fatal to them, as Sydenham^w very well observes. Whence, notwithstanding he thinks wine hurtful in the gout; and says, "In cases where the whole body was converted, as it were, into a gouty substance, he never obtained any desirable advantage over the distemper, unless the patient entirely abstained from all fermented liquors whatever, not even the smallest and mildest to be excepted:" yet he acknowledges there is great judgment requisite, as much harm may be the consequence of so sudden a change. Water agrees well enough with those who have been used to it from their infancy; not so with others: hence Sydenham says^x, "Raw simple water I think dangerous, as I myself have experienced to my own hazard and disadvantage."

For ordinary drink, therefore, he recommends those liquors as the best, "that did not come up to the richness of wine, and yet were as far removed from the weakness of water." For this reason then, when he recommends plenty of thin drink to gouty people, to free them from nephritic concretions, he advises

^u *Traite pratique sur la goutte*, p. 86, et seq.
Podag. p. 582.

^x *Ibid.* p. 583.

^w *Traetat. de*

advise them to take a large draught of small beer in place of supper, as we have mentioned already. But seeing water alone could not be drank in any great quantities, by people not accustomed to it, he ordered such liquors in their stead, “as could not intoxicate when taken in the greatest quantity, nor hurt the stomach by their coldness.” The smaller sorts of beer, or wine diluted with a great deal of water, may serve very well for this purpose; having always, however, a regard to habit, as a person is accustomed to this or that kind of liquor. Such kinds of beer, as, after a complete fermentation, have the flavour of wine, and yield an ardent spirit by distillation, intoxicate in the highest degree, and when given to gouty people are very pernicious. But the kind of beer we here speak of, is mild to the taste, clear, without sediment, and never intoxicates: this I never saw hurt gouty people in the least, especially if they had been accustomed to it formerly. Some commend ale made of wheat: others again think that which is prepared from barley or oats preferable. Different countries prepare different sorts; nor is there much difference to be observed in regard to their wholesome qualities, providing they are small, mild, and clear, and have no power of intoxication, so that they may be taken with safety in pretty large draughts. Hippocrates every where recommends the use of barley ptisan, as the most salutary for sick people. Barley, suddenly dried after it has begun to germinate, then ground to meal, is afterwards put to infuse in boiling water: when this infusion, after a little boiling, is put into casks, and by fermentation has sufficiently worked off all impurities, it obtains the name of beer.

Nevertheless, when the gout becomes inveterate, Sydenham advises then to discontinue the use of wine and beer entirely, and to take a diet-drink, of the roots of sarsaparilla, and china-roots, saffras and liquorice, &c. according to which rule, many other diet-drinks of the like nature may be prepared, which all agree in this, that something mild and aromatic be joined to

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a great quantity of water. He also advises the patient to begin this diet-drink as soon as the fit is over, and to continue it during all the rest of his life *. At the same time he hoped to derive this advantage from a drink of this kind, to wit, that any little errors committed in the rest of the diet would not prove so hurtful to the patients, as when they continued to make use of wine or ale: and though the diet-drink might not at first be so pleasing, yet when they came by degrees to be accustomed to it, they would then like it better than any drink whatever. But should a languor and weakness of the stomach require it, a small glass of generous mild wine may be allowed just when dinner is finished, such as Sherry, Tokay, or the like.

4. The principal aim of all that has been just now said, is to procure good sound chyle, from what is taken down by way of aliment in meat and drink, by means of the action of the chylopoietic viscera. Which chyle, however, is of a nature very different from that of the blood, and still at a greater distance from the perfection of that exceeding highly elaborated fluid that is to pass through the smallest vessels of all, and from the depravation of which (as we have already said, §. 1262, 1263, 1265.) the gout is originally produced. But physiology demonstrates, that this chyle, by circulating along with the blood through the viscera and vessels, and especially by the action of the lungs, may be so changed, as at last to be assimilated to any fluid of the body.

Now, in bodily exercise, the muscles, being in action, accelerate the motion of the venous blood: hence the contractions of the heart are stronger and more frequent, as also the pulse and respiration are in like manner increased, and therefore all the powers concerned in assimilating the chyle to the healthy humours act more strongly in a given time, than when a person is at rest; all the secretions and excretions are forwarded; and therefore all things are disposed in a manner most conducive to health. Hence the reason why physicians, not only in the gout, but also in other chronic diseases, so much recommend a wholesome
bodily

bodily exercise. Neither is the motion of the body of service in sanguification only, but in preparing the chyle likewise: for the pendulous viscera being in constant agitation, and alternately pressed by the action of the diaphragm and abdominal muscles; the secretions of the gastric, pancreatic, and intestinal liquors, together with both sorts of bile, are all by that means increased: whence those who are accustomed every day to hard labour, eat every thing that is offered, and digest it easily; while those who are sunk in lazy indolence and ease, are distressed even by the lightest food, and are perpetually complaining of flatulency. Nor is it sufficient to take exercise only at intervals: as a motion of this sort is almost perpetually necessary, it ought to be followed every day.

But seeing the gout most commonly afflicts persons in advanced years, old people ought by all means to strive against their usual aversion to stirring, if they would enjoy any considerable relief from their disorder; for if they do not resolutely endeavour at this, their joints through years, joined to the malady, grow exceeding stiff, and are rendered at last altogether incapable of motion. And Sydenham^a warns all old gouty people, “That nothing is less to be expected, than that the disease can ever be brought to digestion without exercise; for when it exceeds the natural strength, they frequently perish by faintings and sickness, occasioned by the copious mortific indigestible matter, which cannot be assimilated, and destroys them like poison.” This bodily exercise, however, to be taken every day, must be proportioned to the strength and age of the patients, otherwise they may be debilitated with too much fatigue. Therefore riding is recommended as preferable to all other exercise; because, to those who are accustomed to it, it is the least fatiguing, and is particularly salutary when performed in a pure open air: this we have taken notice of before at §. 1210. But where there is no opportunity of riding, a carriage of any kind may be substituted; though it will not, probably, be attended

^a Swan's edit. p. 502.

tended with so much benefit. Besides this, the movement of the particular parts that were formerly pained contributes greatly to hinder the joints from stiffening, which is a very common complaint in an inveterate gout, and is very difficult to cure. Whence Auelian^b gives the following admonition: "In arthritic disorders, it is of great benefit to give the patients a piece of wax to work with their fingers into a softness, or to make them grasp such plummets in their hands as the dancers call *αλτηρας*, moving these waxen or wooden pegs with the addition of a little lead at first, making them heavier in proportion to their advancement in this exercise, &c. In the same manner, let their airings in a carriage be at first proportioned to their strength; then they may take to walking on a place laid over with soft straw; and while they take care to anoint their body, let them also exercise their voice."

From this it is plain he foresaw, a stiffness of the joints might well be apprehended from too much rest; and at the same time joins to that of walking the exercise of the voice, in order to strengthen the action of the lungs. At the same time it is understood, that all these efforts are to be made while the paroxysm is not as yet entirely gone off, but even where there may yet remain a little pain, though not very severe: for he begins with the gentlest motion at first; then he prescribes walking on a way laid over with soft straw; and for the greater ease to the patient, he would have no shoes on the feet. This is also confirmed by Ægieta^c, who *εν ταις παρακμαις*, "in cases of debility," upon the pain being lessened or not thoroughly gone off, advises exercise and friction, particularly about the joints. And this is still further supported by the authority and experience of Sydenham; who earnestly recommends it to gouty people, that they stir and walk about, even although their joints should be a little pained, as we have already mentioned.

Frictions are of remarkable utility when applied to the parts that have suffered during the paroxysms of

the gout: we have already more than once taken notice of their great efficacy in dissolving obstructions, in the Chapter of Obstruction, and where we discoursed on Contusions, besides several other places. From repeated trials I am certain, they have always procured considerable relief, whenever the patients could be prevailed upon to practise them morning and evening, and particularly about the feet, where the disease most frequently makes its attack. That the simpleness of the remedy might not bring it into contempt, I have ordered the woollen cloths to be well charged with the fumes of some aromatic, or have even applied at the same time some soft ointment: yet, to confess the truth, I have observed the same effects produced from simple friction alone, practised morning and evening every day for a quarter of an hour together; for by this means the parts were strengthened, and any collected morbid matter that began to fix itself was dissipated entirely. Aëtius^d gives the highest commendation to friction, as the greatest preservative against the gout; and orders it to be administered, “not indeed during the severity of the pains and inflammation, but when these are in some degree abated.” He recounts the following salutary effects: “For all those, who use friction in this manner, will find their vital heat increase, any redundancy beyond nature shaken off, all useless recrements worn away; the parts affected will become stronger and better fortified against the disorder, and far less subject to it for the future; especially if, when the pains abate, as hath been observed before, they carefully put in practice this salutary caution, every day, morning and evening, through the whole of life.” As to the ointment for the parts after friction, Aëtius employed a little oil very well mixed up with some salt; but, as I said before, the greatest efficacy, in my opinion, is to be ascribed to the friction alone. I prescribed this preservative to a gouty patient; who thenceforward, every morning and evening, in putting on and off his shoes and stockings, used heartily to rub

^d Serm. xii. cap. 21. p. 314.

rub his feet and legs, till at length it grew so habitual, that without thinking, and as it were with an automatic motion, he performed these frictions as long as he lived: and notwithstanding he was not very strict in keeping to the rules of diet, indulging sometimes a little too freely, yet he had only now and then a paroxysm of a slighter kind, and at considerable intervals; preserving always the flexibility and suppleness of his limbs, and thus could exercise his body with the greater ease. Philagrius^e did not scruple to affirm that he was confident, “that frictions alone would answer very well with those who were even very negligent with respect to the rules of diet.”

Much more, however, is to be hoped from a strict regard to the rules of living; concerning which enough has been already said.

5. It appears from physiology^f, that, during sleep, the motion of the arteries, veins, and heart, are stronger, slower, and more equable; while at the same time, the breathing is deeper fetched, slower, and more uniform. But it is through their means that the blood acquires that perfection requisite to a thorough concoction; as the motion of the humours becomes quicker through the sanguineous vessels, and such as are nearer the heart; but slower through the lateral branches, and those more remote from the same. Now it is evident, that the assimilation of the crude part of our food is performed in the larger vessels; whereas it is in those others that the chyle is perfected and elaborated, so as to acquire entirely the nature and disposition of our finest humours. Since therefore, during sleep, the action of the heart and larger vessels is increased, and at the same time respiration grows stronger; there is no doubt, but, at this time, the most powerful transmutation will be going on, and that which is crude will be thoroughly concocted, and thus produce the most perfect assimilation of the chyle produced; on the deficiency of which the proximate cause of this distemper, in a great measure, depends, as hath been shewn at §. 1265.

^e Ibid.^f H. Boerh. Instit. Med. sect. 590.

But excessive watching and midnight revels have been formerly mentioned also among the causes of the gout: whence it appears how necessary sleep is to gouty people, in refreshing the body, and supplying strength requisite to go through their daily exercise. For this reason, Sydenham^s earnestly advises gouty people to go to bed betimes, and to rise early in the morning; for, however we may allow the same space of time for sleep, yet, as to the effect, there is a good deal of difference, whether one lies down betimes in the evening, and indulges in seven hours rest, or keeps awake till midnight, and passes a proportional part of next day in sleeping. This, even robust and healthy people are sensible of, when they spend the day in sleeping, after late dancing and revelling: for though they have lain in bed a longer time than usual, yet they rise from this length of sleep, rather fatigued and heavy, and hardly are able to go about their ordinary employment.

But seeing men of learning, and those of chief eminence in the affairs of government, are so often tormented by the gout, it ought to be a rule with them to dispatch all important business in the morning; taking care, however, to reserve two hours or so before dinner, to be employed in bodily exercise. The hours after dinner let them dedicate to walking or riding out, or to the agreeable conversation of their friends; but in the evening they must not at all be concerned in any business that requires the least stretch of thought or attention.

By this strict regularity of living have I seen a very inveterate gout rendered so mild, as only with a few short paroxysms, far from being severe, to make itself to be just remembered, as it were, by the patients, who, before they died, had all reached to a good old age. Very few can long bear to adhere strictly to a vegetable and milk diet alone, without any kind of animal food whatever; yet to this last regimen any one may. But when the disease is not as yet become inveterate, nor the body entirely enervated with surfeits

feits and gluttony, there may even hopes arise of a rough cure. "For this method of cure will give some entire health; to others a painful admonition only now and then, not to irritate them by continual overloading^h."

It will be prudent in the physician, to be cautious how he promises a complete cure, especially if the disorder is of long standing, and the age of the patients are somewhat advanced: for if they feel the slightest paroxysms after such promises, they are rendered altogether untractable; and, despising the injunctions of the physician, rush headlong into their former irregularity, despairing entirely of any substantial relief from the distemper, which a physician might very well engage to give, had these patients been willing to observe the rules recommended in this aphorism.

§. 1276. **T**HE *second* intention of §. 1274. is obtained, 1. By a long-continued use of any volatile salt taken in the morning, in small doses, with a large draught of any mild apozem, in order to promote a gentle breathing sweat, or moisture of the skin, for an hour. 2. By warm frictions with dry linen cloths. 3. By drastic purges, together with mercurials; giving towards the evening an anodyne draught.

At §. 1274. it appeared, that the method of curing the gout consisted of two parts: the first, To endeavour by a proper diet, and by increasing the strength of the viscera, to prevent the morbid matter from being accumulated either too easily, or in too great quantity; which particulars have been handled in the preceding paragraph. The other part of the cure is to be directed to this end, namely, To expel with safety that morbid matter which begins to be collected and accumulated in the body, before it has time to produce a new paroxysm; or if that cannot be entirely obtained for the present, the quantity of matter may

at least be so far lessened, as to occasion only a slighter degree of the disorder.

For, notwithstanding all these things recommended in the preceding paragraph may be resolutely put in execution, yet we are not to expect that a thorough and perfect assimilation will immediately take place; and therefore some little depravity will as yet remain, more especially in the finest fluids, which are produced from the most perfect degree of elaboration.

But this morbid depravity circulates along with the rest of the humours, and, when greatly increased in quantity, or rendered still more malignant by stagnation, begins to disturb all the functions of the body, and by that means gives evident signs of an approaching paroxysm, as has been observed at §. 1257. That this morbid matter, however, may sometimes be drawn out of the body, at least in part, is clear from what has been said at §. 1261: For, just before the paroxysm, an acrid phlegm rushed down upon the fauces, and the eyes were irritated by an uncommonly acrid and copious afflux of tears. It was remarked at §. 1272. that this acrid matter descended sometimes into the intestines, and there produced a dysentery. From all which it is plain, that attempts, by the rules of art, to draw off this morbid matter circulating through the vessels along with the humours, are by no means impracticable. When the matter, however, stagnates and fixes at the places where it used to be deposited in producing a paroxysm, this cannot then be done with so much safety; as we have remarked already at §. 1273, and which shall be farther explained at §. 1281. But we may attempt to draw off this matter by the following methods.

1. As the gouty matter, collected in the joints after the abatement of the pain, passes by sweat out of those places which it occupied, as has been explained at §. 1261, we may reasonably hope to expel it by the same passages before it is yet deeper fixed in the joints. See what has been said at §. 1272.

But the usual method to bring about this, is as follows. Five or six grains of salt of hartshorn, or any
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other volatile alkaline salt, is to be given early in the morning at waking: let six or eight ounces of an infusion of saffraſas, or of the decoction of the five opening roots, or any other drink of the like nature, containing a gentle aromatic, diluted with a good deal of water, be immediately drank above it. The patients lie a-bed an hour or two after: then their ſkin commonly begins to break out into a gentle moiſture; which, far from weakening, makes them rather feel brisker. I have for the moſt part been careful to order the feet and knees to be kept well covered; by which I have frequently ſo managed it, that theſe parts have been put into a thorough ſweat, whiſt the reſt of the body, not being ſo cloſely covered up, only gently perſpired. Sometimes this method was continued for two or three months together: in others, it was practiſed once or twice a-week, during the intervals between the paroxyſms, and indeed with remarkable good effects; for the joints, which through the length of the diſtemper had begun to have a tendency to ſtiffen, were now rendered much more flexible. Bathing is alſo recommended, in order to keep the ſkin clean and fitter for perſpiration, particularly to people of dry conſtricted habits: it does not agree ſo well with pale, flabby, phlegmatic people, who find much greater benefit from frictions applied univerſally to all parts of their body.

2. The remarkable efficacy of frictions in this diſtemper, hath been already diſcuſſed at n^o 4. of the preceding aphoriſm.

3. Purges that expel watery humours, called *hydragogues*, are ſuch as have the virtue, not only to evacuate whatever is contained within the inteſtines; but alſo to diſſolve the humours, and, when diſſolved, to carry them off by ſtool. In the cure of venereal diſorders, phyſicians, as we ſhall afterwards ſee, employ ſuch kinds of purgatives; and the effects are, that the patients, from repeated doſes of theſe medicines, become quite pale, and are very much exhausted: for although no one drop of red blood paſſes, but only a watery collection of filthy humours, yet the lively
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florid colour of the countenance, depending on the red blood, vanishes, not by evacuating the blood in its natural consistence, but by dissolving it; for it is very well known, that the red part of the blood is the thickest, and therefore of course must be found only in the larger vessels: for which reason these remedies are administered, not only on account of their purging quality, but also for their great efficacy in dissolving. The celebrated Boerhaave advised his gouty friend Bassand to take every three months a purge of this sort, composed of one part of pure scammony, and two parts of diaphoretic antimony, the addition of which last greatly improves the efficacy of the scammony. This medicine is made use of with great success in the cure of intermittent fevers, when given eight hours before the fit. Twelve or sixteen grains of scammony is sufficient to a grown person; tho' there is some difference to be observed in different people, as some are far easier to be worked upon than others. A medicine of this kind, Helmontⁱ, in a treatise he published in Dutch, calls *diaceltateffon*, the efficacy of which he mightily commends; at the same time, however, allowing, that, together with the morbid fæces, it even carries off some of the wholesome sound humours: and notwithstanding he believed it a heinous crime to reveal any secret of the adepts, yet he was graciously pleased, for the good of mankind, to publish at least this efficacious remedy; though, according to custom, he prepares it in a much more laborious and expensive manner than is necessary. He made his diaphoretic antimony, of the flowers sublimed with sal ammoniac, and the addition of some nitre; which may surely be prepared, with much less expence and labour, of pure antimony alone, and three parts of nitre. Besides, according to him, after the flowers of antimony had been deflagrated with the nitre, the remaining mass was to be carefully washed, till nothing saltish could be tasted, in rectified spirits of wine, which was at last to be drawn off from the remaining calx. Now I have always found

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i Degeraad, &c. der Geneeskonst, p. 186.

it more efficacious, and equally safe, when given without being washed. But it is no uncommon thing with the chemists, to set a higher value upon their medicines, in proportion to the greater pains and needless labour they cost in preparing.

As mercury, and medicines prepared from it, are accounted no inconsiderable dissolvents, they use to add a few grains of mercurius dulcis to this purging remedy. Chemists had always a great confidence in the virtues of mercurials, especially such as were rendered gentle, or, when given in small doses, neither disturbed the body, nor excited a troublesome salivation. A certain arcanum of this kind, which was, however, known to be a preparation from mercury, given to a gouty person during the time of a paroxysm, threw out so great a sweat from the feet, that in two hours time it came through eight folds of blanket, in which they were covered up: and so sensible an alleviation of the pain immediately followed, that the patient was able to walk along the chamber, without the assistance of a staff^k. More cases of this kind are related in the same treatise. Some also have recommended gentle rubbing with mercurial ointment: others have insisted on taking mercury internally^l.

In the mean time, it is chiefly in constitutions that are inclined to fatness, or which abound in mucous phlegmatic humours, that we are to expect any real benefit from purgatives, or other dissolving remedies; for these, in lean constricted habits of body, are by no means proper.

Of the use of purgatives, in the cure of the gout, we formerly spoke, at §. 1271. where it appeared, that physicians took different opinions, some condemning the use of purgatives altogether, whilst others ordered them to be given even in the very paroxysms. Sydenham, as we there mentioned, rejects their use entirely, as well in the fits themselves, as during the intervals between them; but at the same time allows, that, in certain paroxysms, a *diarrhœa* may sometimes prove

^k Observ. intéressant. sur la cure de la Goutte, &c. p. 458.

^l Ghisi Lettere Mediche, p. 110. et seq.

prove a critical discharge. Yet he was always afraid, lest purgatives, when given, should raise such disturbances in the body, as might hasten on a paroxysm that hitherto lay quiet, and would have perhaps otherwise been a long time of appearing: though afterwards, as we said before at §. 1258, he was under less apprehension from them, if, for instance, in the same day they were administered, an opiate was given towards the evening, which very softly and successfully allays any commotion occasioned by the operation of cathartic remedies.

But seeing these drastic purges not only act by evacuating, but also by dissolving, they might be attended with great benefit in skilful hands, and under the restrictions above-mentioned, when administered during the intervals between the fits.

It is for the same reason that mineral waters seem to have been recommended by physicians. The celebrated Hoffman, as we mentioned in a preceding paragraph, highly commends the use of the Caroline baths, as containing an alkaline salt, but which at the same time works off by stool. Coste^m also advises the use of the Caroline baths, the waters of Aix-la-chapelle, and other medical springs, provided the patient does not exceed fifty years of age: for Sydenham remarksⁿ, that we must expect no good from mineral waters, “ where the patients (as for the most part “ is the case,) are in years, or of a phlegmatic infirm “ habit of body: for in these, the natural forces are “ so much impaired and shattered, that there is every “ reason to be afraid lest they should be overwhelm- “ ed, and sink altogether, under so great a quantity “ of water.”

§. 1277. **B**Y these medicines, and by this method of cure, much good may be done, even in the tophaceous gout.

Although the gout is very difficult to cure, yet if it be in that case represented in the two preceding aphorisms,

^m Traite pratique sur la goutte, p. 86.
a calculo, &c. p. 709.

ⁿ De mictu sanguinis

aphorisms, there is great hope of curing the disorder, or at least of procuring very considerable relief, provided the patient will strictly follow the directions of his physician. For, however common the maxim may be, that the tophaceous gout is incurable, nevertheless there is nothing more certain, than that a great deal of good may be done, even in this state of the disease.

Several things have been said, at §. 1261. concerning the matter that constitutes these topi, which so often disfigure the joints of gouty people: from whence it is sufficiently evident we are not altogether to despair of resolving and dissipating such kind of tumours. Sydenham, as we mentioned before, at §. 1269, has observed, that by a daily and long-continued bodily exercise, indurated topi, of very long standing, had been resolved, so as at length entirely to disappear. He remarks, however, that when the chalky tumours converted the surface of the skin into a substance like their own, they were not then to be dissipated; but this tophaceous matter commonly ruptured the skin and came out, the places whence it issued healing up afterwards; and that we must have recourse to bodily exercise alone, to hinder the matter from growing up again in these places, seeing the self-same cause had been powerful enough to dissipate the hardest of these kinds of tumours arising in other particular parts of the body.

Forasmuch then as this chalky matter has been formerly in a condition to circulate through the vessels, and may frequently, when found in these kinds of tumours of a subliquid consistence, be dissipated by bodily exercise; it does not therefore appear to be altogether indissoluble; neither is the art deficient in means, which, if rightly applied, might give us hopes of resolving these sorts of tumours entirely.

As this calx or chalk-stone easily dissolves in acids; and the bones themselves, when macerated in an acid liquor, in which their earthy part dissolves, acquire the softness of a cartilage, as we have said at §. 1261; some have therefore attempted to resolve such tumours
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by the external application of acids, which, however, ought to be tempered, and rendered so mild as not to hurt the skin. Having then distilled a quantity of spirit of sea-salt, after the manner of Glauber, from equal parts of crude sea-salt and oil of vitriol, they put to this spirit as much oil of turpentine as equalled the quantity of sea-salt employed in the process: the oil of turpentine, impregnated with the penetrating vapours of the spirit of sea-salt, acquired a reddish colour: with this oil the gouty tophi were anointed, in order to dissolve them; which sometimes was attended with very good success. The oil of turpentine, being very penetrating, was no sooner rubbed on the parts, than it disappeared; sinking away, as it were insensibly, within the skin itself; and having the acid spirit of the sea-salt united to it, was enabled to act with greater efficacy on the gouty chalk-stone.

Remedies, however, of an alkaline nature, have been more frequently used. Galen^o took a piece of old fat cow-milk cheese, that by chance had been kept very long; and this, being macerated in the broth of a salted leg of pork, was applied to the gouty tophi, with so good an effect, that the skin broke, and every day poured out little soft pieces of chalky matter without any pain. The same remedy was afterwards tried on several others, with equal good success. Now it is very well known, that old cheese is of an alkaline nature, and at the same time turns rancid, especially when fat, as that commonly is which is made of milk before it is deprived of the cream. It is true, indeed, the chalky matter came out only when the skin broke: nevertheless it appears as if something like a solution had begun; as Galen's words are, that it came *pouring* out. Aëtius^p prepared a medicine for the gout, of a lixivium and the spume of nitre, which he calls *erosive*, because it rises into little bubbles, and erodes the skin. And in another place^q he recommends quick-lime, with an equal quantity of nitre, mixed up with hogs-lard, to be applied to the chalky tumours.

^o De simpl. medic. facult. lib. x. cap. 9. Charter Tom. XIII. p. 282.
^p Serm. XII. cap. 27. p. 320. ^q Ibid. cap. 45. p. 347.

mours. Now it is very well known, that what the ancients called nitre, was by no means the same with the salt which passes at present in the shops under that name; for there are many arguments which serve to prove the nitre of the ancients was of an alkaline nature: besides, we know that the acrimony of alkaline salts is very much increased by the addition of quick-lime. Trallian^r recommends, as a very efficacious remedy for resolving gouty tumours, and the virtues of which had been confirmed by long experience, a certain cerate, which, besides the spume of nitre, contained a lixivium used by the hatters in scouring their woollen stuff. From seeing, therefore, that all these remedies recommended by the ancients were chiefly of an alkaline nature, I was determined to try an application of a similar kind, which indeed contains a fiery acrimony, but so diluted as cannot by any means prove in the least hurtful, yet has all the efficacy of a powerful dissolvent.

I had considered the nature of the common caustic used in surgery, that it was prepared of alkaline salt and quick-lime, burnt together in a very strong heat, and melted in a crucible; from which resulted a composition, that when applied to a living body, in whatever place it touched, was sure of producing a dead gangrenous eschar, which afterwards melted down into a corrupted ichor. I had observed an alkaline salt to be rendered much more acrid by the addition of quick-lime; and that then, when dissolved in water, it yielded a lixivium, which not only dissolved the fat, but the solid substance of animals, having at the same time no power on that of vegetables. It is very well known, that all the gold lace used for clothing is wrought upon silk thread, so as to cover it entirely; and in order to clear the gold lace from the silk, when either the clothes are dirty or very much worn, they boil it in a ley of this sort, until all the silk is entirely dissolved; and when the liquor is poured off, the gold, or rather the silver done over with gold, remains pure behind. Now a linen cloth, being made from a ve-

VOL. XIII.

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^r Lib. ii. cap. i. p. 639, 641.

getable stuff, will suffer no such injury; but silk, being the production of an animal, dissolves entirely in this liquor.

To shorten the labour, I took crude tartar reduced into a powder, and, mixing it with thrice the quantity of quick-lime, placed it in a clay furnace, keeping it a proper time in a strong degree of heat. When the furnace was cold, I caused this saline mass to be dissolved in water, filtered and evaporated into a salt, which was kept in glasses well stopped to exclude the air, and prevent it from liquefying. So much of this salt I dissolved in pure water, or that distilled from roses, or elder-flowers, as, upon tasting, left no acrimony on the tongue, or any thing disagreeable to the taste: for then I was sure it could do no injury to the skin. The gouty tumours were bathed with linen cloths dipped in this solution warmed, with such happy effects, that sometimes, in a few days, they were entirely dispersed. In exostoses also, and other obstinate tumours, I have found the same do a great deal of good.

But as alkaline salt and quick-lime are both employed in making of soap, therefore we see the reason why its use is esteemed so harmless, and at the same time so very efficacious, chiefly because, by the additional fat, or grease, being intimately united to the alkaline salt, the acrimony is entirely blunted.

From the lixivium, however, above recommended, when sufficiently diluted, still more remarkable effects are to be observed. Hence we may understand why alkaline remedies have been so often insisted on by physicians of the greatest eminence in the profession, not only by way of preservative from, but even as a cure to gouty tumours. Hoffman^s recommends the volatile tincture of sulphur, prepared from quick-lime, sal ammoniac, and sulphur; and that a piece of brown paper, dipped in this tincture, be applied to any part where gouty topi are in the least to be apprehended: and in another place^t he cries up the balsamum sulphuris

^s Med. Ration. et System. Tom. IV. sect. ii. cap. 11. p. 531. ^t Ibid. p. 536.

phuris antimoniacum, made of the salt arising from the scorii, in making the regulus of antimony, infused in oil of turpentine or juniper, as a sovereign and speedy remedy for discussing inveterate gouty tumours.

But from the chemical preparation ^u of the regulus of antimony we learn, that the tartar and nitre, which are melted in a crucible, together with the antimony, are converted into an acrid alkaline salt, which attracts and unites to itself the itself the sulphureous part of antimony, while the metallic part sinks to the bottom ; and therefore this balsamum sulphuris antimoniacum hath all the properties of an alkaline salt, and these indeed of a kind abundantly acrid.

§. 1278. **I**N extreme necessity, and to soothe the raging pain of the parts, we may often use opiates internally, plentiful draughts of milk-whey, or any other thin diluting liquor, drank warm ; and externally, emollient, anodyne, warm applications, or even whipping the part with nettles, or anointing with terebinthinated balsam of sulphur, or burning with moxa.

Whenever indeed the pain is gone off, or even when it is tolerably gentle, the gouty people bear their disorder then without much complaint : whence the invincible Queen of Pain, as was said at §. 1273, according to Lucian ^w, breaks out into these words :

*Verum dolor mihi malorum adjutor est ;
Nihil ego namque sum, si ab hoc relicta sim.*

But pain supports the terror of my throne ;
For I am almost nought when he is gone.

But the cruel bitterness of torment in this disorder is sometimes so great, as to exceed all human patience : then the wretched sufferers call out to their physicians, to their friends, and to all present, conjuring them, by the love of every thing sacred, to procure them some respite from the cruelty of their tor-

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ment,

^u Herm. Boerhaave Chem. Tom. II. p. 507, et seq. ^w Tom. III. p. 664.

ment, and are ready to try any one thing which can flatter them with the least hope of relief: whence there has arisen an infinite number of remedies; “for the extreme sufferings of the sick impel them to seek out for themselves various remedies^x.” But as these very sharp, raging pains, usually of themselves abate in the morning; the patient very often ascribes that relief to the remedies, which is only a common effect arising from the nature of the distemper, as we have at greater length already shewn.

From what was said in the article concerning Pain, §. 228, 229. it appeared that there were two ways of alleviating it: Either by taking away the cause of pain; or by taking away the sense of it, though the cause should even remain. Both these methods have been attempted by physicians, as well as by patients themselves.

The first of these methods is always the safest, but which cannot be obtained at all times in this distemper; for the morbid matter, from whence the pain arises, can by degrees only be so far subdued, as to be fitted to pass through the places it occupies, §. 1261. in the way of perspiration; and whilst this is performing, the pain often rages to an insufferable degree. Now the principal remedies against the pain are, first, To soothe and blunt every degree of acrimony; and next, To soften and relax the parts affected. For these purposes, weak veal broths, large draughts of thin whey, infusions drawn from the emollient herbs, and the like, are greatly recommended; and are of real service, as they dilute and sheathe whatever there is of acrimony, and relax the more solid parts: but yet they are not sufficient to procure immediate relief. There have also been invented a vast number of external remedies of the same nature of various forms, and different methods of application. From the testimony of Aretæus^y we are informed, that there was a noted remedy in his days, famous for allaying the pain, which was as follows: They let a hungry goat feed upon the iris plant till it could take no more: then by the

^x Aret. de Curat. Morbor. Diuturnor. lib. ii. cap. 13. p. 134. ^y Ibid.

The time this food was expected to be thoroughly digested, they flew the creature; and the moment it was cut up, put the patient's disordered feet into the reeking entrails of the animal. We have, in several other places, taken notice of the efficacy of that bland, stinky vapour, which exhales from the entrails of an animal newly killed, in allaying most successfully the bitterest and most outrageous pains. But here the wretched sufferers, while they are under the severest torture, cannot bear the tenderest touch, or the least motion of the parts affected, not even so much as the very weight of the bed-clothes: so that, however useful this warm focus may be in its own nature, I do not see how it can be so easily applied while the limbs are in so miserable a condition. Sydenham condemns all external remedies whatever, as being either hurtful or useless, (see §. 1273.): and he affirms, that however he might, at a particular time, have found benefit from a poultice of bread and milk, with a little saffron, and some oil of roses, yet it never was of any service in the beginning of a painful paroxysm; whence afterwards, for many years, he laid aside the use of external remedies entirely. Coste², in like manner, condemns the use of cataplasms for allaying the pain, as not only useless, but even hurtful; therefore only kept the parts affected well wrapt up in warm flannel; being convinced from experience, that this was the best method to promote perspiration, by which alone the pain could be effectually relieved.

The next, and almost only thing now to be considered, is how to soften the rigour of the torment, by taking away the sense of pain, while yet the cause remains. This may be done two ways, (see §. 229.) namely, By deadening the *sensorium commune*, or seat of sensation, by the power of narcotic remedies; or, By rendering the nerves quite unfit for all kind of sensation. Sydenham^a, though pretty free in the use of opiates in several other diseases, was very scrupulous of employing them in allaying the pains of the gout; for he gives this prudent admonition, "Should

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² Traite Pratique sur la Goute, p. 64. ^a Traictat. de Podag. p. 601.

“ the pain then be excessively severe, the patient, till
 “ it is a little abated, had better be contented to keep
 “ to his bed only, than to take any thing by way of
 “ anodyne: but yet, if the pain shall very much ex-
 “ ceed his patience, he may then take a small quan-
 “ tity of laudanum in the evening; otherwise, it is
 “ much better that it be entirely omitted.” However,
 should the pains be really so violent as to require the
 use of opiates, these remedies ought by all means
 to be concealed from the knowledge of the patients;
 for when they have once experienced a relief of this
 kind, they would desire never to be without it in pains
 of a slighter nature. Among the causes that hinder
 the gouty matter, when ripe, from being discharged at
 the usual places, that of the improper use of narco-
 tics has been already reckoned at §. 1273. But gouty
 people, when under the severity of these racking pains,
 would willingly purchase their ease at the expence of
 life itself; and despising all a physician can say, at
 their own peril, often administer opiates to them-
 selves; which more than once I have had particular
 occasion to see.

The ancients sometimes applied narcotic remedies
 externally for allaying the pain; but they seem to have
 been always apprehensive of danger from their use.
 Aretæus, as we said before at §. 1273. employed them
 to allay the immoderate heat of the parts affected; but
 when this end was once obtained, which generally
 happened in an hour, he ordered them to be removed
 immediately, to give place to applications of a diffe-
 rent kind. Trallian^b, in like manner, when he re-
 commends, in the extremity of pain, saffron, the juice
 of coriander, glaucium, with a little opium, to be ap-
 plied, immediately subjoins, “ But it is necessary to
 “ know, that we are to take particular care how we
 “ make too free with narcotic ointments, epithemas,
 “ and such applications, as they commonly do much
 “ more harm than good. But if, through the excess
 “ of heat and pain, we are obliged to use them, then
 “ we must be strictly attentive and diligent to see that
 “ these

^b Lib. ii. cap. i. p. 609.

“ these remedies lie not too long upon the parts; but
 “ be they ointments or cataplasms which happen to be
 “ applied, that minute the heat and pain abate they
 “ must by all means be taken away.” All these serve
 only to destroy sensation in the nerves, while that
 which occasioned the pain remains as yet untouched.
 Servius Clodius, as was mentioned before at §. 1273.
 anointed his feet with poison, with this effect, that they
 were ever after deprived of all manner of sensation.

In speaking of the remedies proper for allaying pain,
 at §. 229. we have taken notice that Hippocrates used
 to advise deep scarification, and even to burn the
 places affected, as a certain remedy. Here it is plain,
 that the nerves affected must have either been cut
 through by the knife, or destroyed by the hot iron.
 We had occasion to make mention, at the same time,
 of that soft down of the herb artemisia, which the
 Asiatics use by way of actual cautery to any part, and
 which is longer of acting than the hot iron, but yet
 much less severe: Hippocrates^c made use of crude lint
 for the same purpose. However, it is pretty certain,
 that the downy part of the artemisia, which the Asi-
 atics call moxa, when it is burnt upon the part, does
 not always destroy the nerves, but acts by drawing
 forth the humours from the part affected, every thing
 being agitated and set a-stirring by the quick and active
 force of the extraneous heat. In the *Miscellanea Cu-
 riosa*^d we have a very remarkable instance of the good
 effects of this remedy, in allaying the pains of the
 gout. A certain clergyman, who inherited this dis-
 temper from his father and grandfather, as he was
 laid up with a very severe fit in Batavia, the metro-
 polis of the Dutch settlement of that name in India;
 an Indian woman promised, not only to give him ease,
 but also to cure this distemper entirely, provided he
 would undergo only a gentle burning. He was averse
 to it at first; but upon his pains increasing, he at last
 consented. This woman, then, taking a bit of moxa
 no bigger than a pea, and forming it into the shape of a
 cone,

^c De Affection. cap. 8. Charter. Tom. VII. p. 630.
 an. 6, 7. p. 319.

^d Decur. 1.

cone, applied the base to the place where the pain chiefly was felt, then set fire to the apex of this little cone with a small match of an aromatic twig. Part of the moxa was converted into ashes, and part remained adhering to the skin, which the humidity, that issued from the parts, had hindered from burning. This burning with the moxa was several times repeated, though for the most part it is only performed thrice; and the whole operation was finished in half an hour, though he had this remedy applied to several places at once. “ He said that he could observe by his sight, “ as well as feeling, the quickest motion of the humours just underneath the skin, and that all his “ pains abated immediately: in the mean time he allows, that the part affected threw out a rank stinking vapour; and that soon after he fell into a continued sound sleep, which he had not enjoyed for several weeks before: next day, when he waked, he found nothing of the disorder remaining, but a swelling in the feet; and this also went very soon off.”

The remarkable and sudden ease without any injury following, the motion felt immediately under the skin, the filthy stinking vapour, do all seem to point out, that the pain was not taken away by a retropulsion of the gouty matter, but rather by a thorough evacuation, as the morbid matter, put in motion by the fire, went off by the pores of the skin, striking the nostrils with a most offensive smell. (See §. 1261.) That all the morbid matter, which was accumulated in the joints, had gone off from thence, appears from this, that he kept free from the gout for seven-and-twenty months together. But yet the original gouty character, or disposition, was by no means destroyed; for he owns, that afterwards he had several slight attacks of the same distemper: and a great while after, when he lay ill of a very dangerous fever, the disease terminated in a smart fit of the gout, to his great joy, as he then knew for certain where to apply for relief from the pain: at the same time he affirms, that this same remedy had done most remarkable service to all those on whom he could prevail to try it.

It is very plain, however, that the whole of this effect is to be attributed entirely to the action of the fire; and not to any medicinal virtue residing in the moxa, or in the aromatic twig-matches that kindled it. We may at the same time perceive, that this method does not by any means destroy the original cause of the disease; but only dissipates sooner that quantity of morbid matter, which, being deposited at the joints, excites all these cruel tormenting pains. Sydenham^c, though he does not seem to have any great opinion of the use of moxa, and thinks that the burning with crude lint, after the manner of Hippocrates, may produce the same effects, yet owns, that “this gentle burning of the part affected *promises* some mitigation of the pain, (which it may even sometimes *effect*) by drawing forth the most subtil and spirituous part of the morbidic fomes already lodged in the joints: but yet that little benefit, which does arise from this remedy, as it can by no means reach the indigestion, which is the antecedent cause of the gout, must be very transitory and fleeting.” It is a great deal, however, that it can allay, with safety, the bitterness of the pain, and dissipate the gouty matter; for when these are once done, we may then with more ease administer all those other remedies, for helping digestion and strengthening the bowels, that were recommended at §. 1275.

Neither is there any thing so very terrible in the burning with moxa, seeing the very boys in Asia, according to Kaempfer, endure it without so much as a whimper; which, he says, he has a hundred times seen. I have burnt a pretty large cone of moxa upon my own thigh, and found that I could bear the pain very easily; for as the fire spreads itself insensibly through the lighted down of the artemisia, the heat is increased by degrees, until it rise to its utmost pitch, which is pretty tolerable. Perhaps gouty people are less sensible of pain, from thus superficially burning the skin, as they are pressed by a fiercer degree of pain from the parts subjacent; according to what Hippocrates

crates says, "Of two different pains arising in the same place, the most violent will render the other less perceptible." See §. 650, no 3.

As to the method of preparing moxa from the down of the artemisia, an account of it may be seen in Kaempfer ^f, and ten Rhyne ^g.

It was perhaps with a view to obtain the like effects, that some physicians have tried to allay the pains by remedies which contained a fiery acrimony, and, upon being applied to the sound skin, produced an inflammation, expecting that the morbid matter, when once set in motion by these, might be sooner and easier dissipated. Agreeable to this, there is a plaster, or cerate, described by Trallian^h, in which we find, besides the nitrum alexandrinum, some euphorbium: "For it agitates and frets the outer skin, draws forth" and dissipates whatever lies deeply obstructed, and "removes the pain entirely." They even applied so hot and acrid an ingredient as euphorbium only, boiled up with wax and oil; mustard beat up with vinegar and figs; blistering plasters, with cantharides, and also garlic ⁱ. All these, no doubt, are exceeding acrid medicines, inflame the skin, occasion a good deal of pain, and therefore can alleviate it in no other way than as they contribute to dissipate the morbid matter: whence Trallianus did not altogether approve of them, being afraid, lest, when the finer parts were dissipated, what remained should be fixed more immoveably.

Many have recommended anointing with terebinthinated balsam of sulphur; which is also a remedy abundantly acrid and penetrating, but disagreeable on account of its horrid stinking smell. Perhaps the same effects might be as well obtained from the fragrant aromatic distilled oils, such as cinnamon, cloves, &c. especially if they were properly mixed and diluted with something of a saponaceous nature, which might prevent them from hurting by too great a degree of acrimony; for these essential oils are so acrid, as to inflame the skin when applied alone. We have an account of

^f Amœnit. Exotic. p. 592, &c.

^g De Arthride, p. 108.

^h Lib. ix. cap. 1. p. 623.

ⁱ Ibid. 625.

of a remedy of this sort^k, prepared of oil of turpentine, salt of tartar, and Venice soap, mixed together, with the addition of spiritus matricalis, or juniperi; and whenever it was necessary to use this medicine, to every ounce of it they dropped fifty drops of the oil of Coelilaban, which was thought to be distilled from the roots of the nutmeg and clove tree, and brought from Asia. But as this oil is very aromatic, and as it may not sometimes be so easy to procure it, the essential oils of nutmegs, mace, or cloves, seem to have all the requisites fit to supply the deficiency. Mention is made likewise of the very quick and successful effects of this remedy, when applied for pains about the knee-pan^l and parts adjacent.

All these act by irritating, moving, heating, and sometimes by resolving: and, if the morbid matter can by their means be expelled out of the body, do service; if otherwise, they increase the pain, and occasion, besides, a great deal of harm. The stimulus of nettles, raising a smarting pain, was recommended in the cure of a palsy at §. 1069. but no one, so ill, thro' extreme pain, as to tremble even at the approach of any thing to touch him, can ever think of enduring a whipping with them.

§. 1279. **B**UT external applications in any other circumstances, will sooner occasion an induration of the part affected, and an immobility of the joints.

All the remedies, from whence an alleviation of the pain might be expected, have been enumerated in the preceding paragraph. We see, however, that the physicians, who recommended these applications, whether of a cold or hot nature, have always ordered them to be very soon removed. Thus Trallian^m, after enumerating the remedies which lessen pain by stupefaction, says, “For all these remaining too long on the parts, usually bring on stiffness and immobility

^k Haerlemsche Maatschappij, Tom. II. p. 7. et seq. ^l Ibid. Tom. IV. Berichten, p. 22. ^m Lib. ii. cap. 1. p. 600.

“ bility in the joints :” and speaking of warm and acrid applications, adds, “ For they are exceeding
 “ hurtful, even when they seem to give ease, &c. be-
 “ cause the finer part is only exhaled, while the grof-
 “ ser terrestrial parts remain behind, which of course
 “ adhere more closely, and are more deeply fixed
 “ within the joints, &c. for all those who have had
 “ acrid medicines alone, without any thing emollient
 “ in them, applied to the parts, especially in the be-
 “ ginning of the paroxysm, when the morbid matter
 “ abounded, were commonly much disabled in their
 “ joints, and it was a considerable time before they
 “ recovered again the use of their limbs, so as to be
 “ able to walk.”

It was before mentioned at §. 1273, that Sydenham observed, both from what he had experienced in himself, as well as from what he had seen in others, that pain was no other than nature’s bitterest remedy, which she employed to bring the matter, deposited at the joints, to maturity, and to render it fit to pass out by perspiration, in the most salutary manner, from the part affected. Therefore, so long as the patient complained of exquisite pain, he never was afraid; and could venture to assure them, that the more acutely painful the paroxysm was, the longer respite they might expect from the next attack: but when the pain was inconsiderable, and they rather complained of a disagreeable sickness; then, indeed, he apprehended the worst consequences from so dangerous a situation of the disorder.

This was the reason why he never chose, but when urged to it by the extreme severity of the pain, to have recourse to anodynes, being always suspicious of some dangerous consequence or other attending their application.

Even the soft poultice he applied to his own disordered feet, he at last laid altogether aside, as finding it of very little service. Coste too, as we have said, rejected all outward applications whatever; keeping to flannel alone, which by softly covering the diseased limbs, and defending them from the external cold,

favoured greatly the salutary perspiration of the parts. Nay, it has been always observed, that the joints stiffen sooner, for the most part, where the disordered limbs have been too much pestered with fomentations, ointments, plasters, and the like. See what has been already said at §. 1261.

In allaying pains of the gout, therefore, it is a matter of the greatest nicety to manage the use of anodynes with safety.

§. 1280. **B**UT the most efficacious remedy is that, which is most opposite to the cause from whence the gout arises, (§. 1255, 1258.)

In the two paragraphs here cited, the different causes that give rise to the gout were enumerated; as also those that are apt to excite and accelerate a latent paroxysm, which, without this stimulus, might have certainly kept longer away. It is therefore of itself abundantly evident, that all such causes must be carefully avoided, if we are desirous to obtain a cure, or even any alleviation of this distemper; for whatever is able originally to produce it in a strong and healthy body, must certainly strengthen and increase it when already produced. All physicians unanimously acknowledge, that they very rarely find gouty people so obedient to their advice as they ought to be. The long-continued intervals between the paroxysms, observed in the beginning of the disease, make the patients unwilling to own it to be the gout, and thus vainly flatter themselves with the hopes of keeping free: and many, notwithstanding they stand confessed votaries, being fully initiated in the mysteries of this *Invincible Queen of Tortures*, yet being born, as it were, the genuine offspring of jolly Bacchus, chuse rather to indulge their jovial inclinations in daily feasting and midnight revels, than to buy off whole years torment at the easy price of a life of sobriety and temperance. Whenever the excessive pain goes off, they laugh at all physical admonition. In the mean

VOL. XIII. R time,

time, the disease strikes deeper root ; the functions of the viscera are more and more injured ; old age comes on apace : it is too late then to be wise ; and all their repentance, however sincere, will stand them in no stead : for if ever that common adage was applicable to any distemper, it certainly must be so with respect to the gout :

*Principiis obsta, sero medicina paratur,
Cum mala per longas invaluere moras.*

Wisely at first oppose the growing ill,
Which long neglected baffles all our skill.

§. 1281. **B**UT if there are signs that the gouty matter has seized the internal parts, we must, without delay, endeavour to drive it to the joints : therefore, let large blisters be immediately applied to the thighs, and warm saline aromatic fomentations to the parts usually pained. Let the patient walk a great deal, or be well jolted in a carriage ; let him also drink large quantities of some sudorific aromatic decoction ; or if that does not answer, some good old Rhenish wine. When this is done, and the pains begin to be felt in the usual parts, let him be put into a warm bed, and be well covered in order to sweat.

At §. 1273. we discoursed of the signs which declared when the gouty matter was come to maturity, tho' not perhaps deposited as yet at the places where it has usually discharged itself during former paroxysms. A skilful physician will be suspicious of every new symptom on this occasion, however slight it may appear. I have more than once seen a catarrhus cough in the spring, that attacked several other people without much danger, in gouty people degenerate into a most dangerous peripneumony upon the eve of an approaching paroxysm. Whenever, therefore, veterans in the distemper shall remain a long time without having a paroxysm, there is always then some latent mischief

be apprehended ; especially if the relief is not to be attributed to the proper diet and method of cure formerly mentioned. At this time, therefore, we must employ every art to excite pain in the joints, that the morbid matter, which now occupies the viscera in so dangerous a manner, may be derived towards the usual places, and thus life itself be preserved at the expence of a sharp but salutary pain.

The patients are frequently very happy in finding themselves respited so long from their torments ; nay, even are violently enraged at their physician, if they suspect any attempts made to bring back their pains ; and yet, without this is done, no salutary cure can be expected.

If, then, the signs mentioned at §. 1257. are present, or if such causes have preceded as were accustomed to accelerate the paroxysms, and no pains of consequence are excited in the joints ; but, on the contrary, irregular symptoms, such as anxiety, gripes in the belly, vomiting, hickup, pains in the sides, difficulty of breathing, great inclination to dozing, delirium, sore throat, &c. shall appear ; then, as the danger is imminent, some efficacious and powerful remedy must be attempted.

Formerly, when treating of the cure of Obstructions at §. 134. we had occasion to speak of those things, by which the efficacy of particular remedies might be either derived, attracted, or propelled to certain places of the body. It was shewn at §. 859, 860. by what means the morbid matter formerly oppressing the lungs, being rendered now moveable, might be determined to various parts of the body, provided these parts were previously fitted and disposed, so as to have less of resistance and more of attraction ; which is principally effected by *relaxation* and stimulus ; whilst at the same time nothing will more contribute, not only to support, but even to invigorate the powers of digestion, than a light, thin, liquid, and gently aromatic diet, wherein a little wine may be admitted.

Hence large blisters are forthwith applied to the thighs, where a gentle irritation is to be perpetually

kept up, which will of course, as long as the stimulus remains, attract a more copious flow of lymph. Sinapisms and plasters of galbanum are also laid to the feet; and it is sometimes of great service to foment these parts with warm infusions of fresh rue in Rhenish wine, adding to every pint of the wine half an ounce of sea-salt. Walking, or going out in a carriage, according as the patient's strength or the favourableness of the weather will allow, is also of very great utility; but otherwise, lying in bed, well covered up, will dispose the body to a gentle breathing sweat, which may be greatly assisted by plentiful draughts of some warm infusion gently aromatic, such as saffrastra tea, or that of the saunders wood, or a decoction of the five opening roots, and the like, where a mild aromatic is diluted with a good quantity of water. To promote the same intention, some fragrant wine may be of use, such as good old Rhenish, especially where the patients are languid, and have been long afflicted with the distemper, and above all if they have been accustomed to a liberal glass. A certain gouty veteran, who had been a strenuous drinker, was once taken ill; when he felt very little or no pain in his feet, but complained of a sickness and nausea, together with slight twitches in his belly, and great debility. He was entirely forbid the use of wine by his physician. However, a friend of his own, an old bottle-companion, with whom he had had many a stout drinking-match, coming to see him, and ordering immediately all the other stops to be carried away, prevailed upon him to drink a full bottle, to his own share, of good, old, generous Rhenish; with this good effect, that in a few hours the feet began to be smartly pained indeed, but then all the other symptoms vanished: whence in the morning, when his pains abated, and the physician came to renew his visit, he diverted himself very merrily at his expence; boasting that, to his great comfort, he had made a discovery that good wine was the only true specific against the gout. Sydenham, in the following quotation, acknowledges, " that in the paroxysms at the latter periods

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“ of life, he never found any thing succeed so well,
 “ in recovering the weakness of the stomach, and the
 “ languor, accompanied with a sort of windy gripes,
 “ as small glasses of Canary wine, taken at any time
 “ when oppressed with sickishness and languor; nei-
 “ ther had he ever experienced so much efficacy, even
 “ from French claret, theriaca andromachi, or any
 “ other cordial whatever, that he was hitherto ac-
 “ quainted withⁿ.” Coste^o, in the like cases, recom-
 mends the use of wine, and even to have some of the
 hot stimulating aromatics added. When, during a fit
 of the gout, he found the stomach troubled with disa-
 greeable spasms, he commonly took some drops of
 distilled oil of mace, or cinnamon, in a little Spanish
 wine; which had the good effect to allay the spasm,
 procure him a refreshing sleep, and to promote a kind-
 ly breathing sweat.

But when any very terrible symptom, that would
 admit of no alleviation, caused by the matter flying
 inwards, and threatening even life itself; then Sy-
 denham^p, rejecting all other remedies, had immedi-
 ate recourse to liquid laudanum, twenty drops of which
 he ordered for a dose, “ provided the disorder had not
 “ reached the head, or natural and vital parts;” de-
 siring the patient to go to bed, and compose him-
 self to rest. For if, for instance, the lungs were attack-
 ed by the morbid matter, then, as we mentioned be-
 fore, he treated the disorder as a peripneumony, by
 bleeding,^q &c. When the morbid matter, driven
 back, affects the stomach, there follows terrible pain,
 with fruitless efforts towards vomiting: in such cases,
 Coste^r used to order twenty drops of liquid laudanum
 to be given immediately; and to a soldier who was
 miserably afflicted in this manner, being strongly con-
 vulsed, and having cold sweats, he gave thirty. Af-
 ter taking these, a vomiting of bile in great quantities
 soon follows, which commonly gives immediate re-
 lief. Sydenham^s, when the pains vanished from the

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joints.

ⁿ Traçtat. de Podag. p. 589.^o Traite pratique sur la goute;

p. 66, 67, 68.

^p De Podag. p. 598.^q Ibid. p. 599.^r Traite sur la goute, p. 72.^s De Mict. Sang. p. 706.

joints, and this was succeeded by a great degree of sickness and oppression, attended with vomiting and gripes, immediately swallowed down some pints of small beer, or other weak liquor; and as soon as all this came away by vomit, took eighteen drops of laudanum in a little Canary, went to bed, and composed himself to rest: By this method, he assures us, he has more than once been snatched from imminent danger. But as soon as the spasms of the stomach and intestines grow easier, the patient, if he is kept warm and well covered, finds his skin at first hot; then a moisture takes place; to this a most salutary sweat succeeds; by which all his complaints are relieved, the pain soon comes back to the usual parts, and presently all the other irregular symptoms vanish; insomuch that the patient, who a little before was given over for lost, shall in a few hours be out of all danger; with this inconvenience however, that he must commonly suffer a good deal from the sharpness of the gouty pains.

§ 1282. **W**HOEVER duly considers all this, will see the great difficulty in curing the gout, and likewise the reason why the most eminent physicians and chemists have sought a cure for it in such remedies as renew the blood and juices; why, and how far milk contributes to this end; whether a specific acrimony in the red blood is the cause of the gout; whence nodi, tophi, and chalk are generated; why a fit of the gout without any swelling is the most painful, and why it is milder when the parts swell; why the pain at last ceases in gouty people; why the intervals are the longest and easiest, when the paroxysms are the most sharp and painful; why, when the violence of the pain ceases, the patient is hardly ever entirely free from the disorder; whether there be any alkaline absorbent, which can wholly extirpate the gout; why Sanctorius's sta-
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tical chair is the best director and presager of what will happen, and of what ought to be done for gouty people. But the gout, whether it resides in the vital spirit, in the most thin humour of the joints, or in the semen itself, is discovered only by its violent effects.

When all that has been hitherto said concerning the gout is duly considered, the difficulty of an entire and radical cure will appear abundantly evident: for during a paroxysm, to alleviate the pain, or even to take it wholly away, is not to cure the gout. Strolling quacks get the credulous sufferers to believe otherwise; and having touched their money, walk off, and give themselves no further concern about the consequences. But, as Helmont very well says, the pain, the burning heat, the swelling, are not the gout, but only the visible effects of it. He therefore, who imagines himself able to cure this distemper, must have the art to remove that predisponent cause, that morbid character which a parent transmits to his offspring, which sleeps as it were, and lies quiet, for a series of years, giving no manifest signs of existence, until, at a determined period of life, it is rendered so active as to occasion a very painful kind of disorder. This same predisponent cause may however arise in such as never had any of their family subject to the distemper, but who have perhaps indulged too freely in drinking and venery, or may have contracted it from many other causes already enumerated at §. 1255: yet the disease in itself, whether in those who have it by inheritance from their parents, and live soberly, or in others who have contracted it by the most dissolute way of life, is always uniform and still the same. The paroxysms may be lulled to rest a long time by the use of a milk-diet; but yet that morbid character still remains, which, whenever the regimen is changed, awakens this paroxysm to a greater degree of severity than ever. Whence Sydenham says, §. 1268, that a thorough radical cure of this distemper, by which
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the patient may be entirely secured from any possibility of the same returning, as yet remains concealed in Democritus's well.

What still adds to the difficulty of the cure is, that the gout afflicts mostly old people, as also that the patients are very seldom inclined to observe strictly the most salutary rules laid down to them by their physicians; of which Aretæus makes complaint, as mentioned at §. 1258.

In such remedies as renew the blood, &c.] Sydenham believed that the whole substance of the body might be converted into a gouty fomes; and therefore laid it down as a rule, that he who attempts to cure the disease, must change the whole habit of the body. Ægineta, as we have seen at §. 1265, was of opinion, that, in this disease, the faculty which nourished all the parts of the body was wholly decayed; to restore which, therefore, was thought the only means to cure the distemper, and to root it out entirely. It is very well known what confidence the ancient physicians placed in hellebore, as a powerful alterative in the most obstinate and difficult distempers, where it was necessary to change the prevailing habit of body. So Aretæus (§. 1268.) calls the veratrum an efficacious remedy, and recommends it to people in the gout. The chemists, as we have said at the same aphorism, relied on the virtues of their arcana, which they believed could reach to the most intimate recesses of the vital spirit, and radically destroy the seminal character of the gout. Nothing sooner, or more effectually produces a thorough change in the body, than some strong and sudden affection of the mind: and in this manner also we have instances of the gout's being cured. (See §. 1258.)

Why and how far milk, &c.] This does not destroy the morbid character, but keeps off the exciting causes, as it is an animal humour already prepared in the body, and easily assimilated by weak viscera. Hence gouty people, whilst they continue to use a milk-diet, remain entirely free from all attacks of the distemper; but so soon as they grow tired of this aliment, and
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betake themselves to any other kind of food, the fits return, and for the most part with much greater violence. See what has been said at §. 1275, n^o 3.

Whether a specific acrimony, &c.] At §. 1263, it was said, that too great an acrimony, joined to a visciduity of the humours, might justly be blamed as one cause of the gout. In the same place also we produced a very extraordinary example, to shew that an acrimonious matter might lie concealed a long time in the body of a gouty person, without being evacuated by any of the usual excretions; and, accumulating more and more, might at last, as it were by one effort, and all at once, be expelled out of the body. But seeing the excessive use of four white wines, and other acids, §. 1255, are reckoned among the causes of the gout; and since the throwing up by vomit a most acrimonious acid matter gave so sudden relief to a gouty person almost distracted with pain, there is therefore no denying that sometimes an acrimonious acid may prevail in this disease. Yet that this acrimony can by no means be reckoned an universal cause of the gout, was formerly demonstrated, at §. 1275, n^o 2.: for sometimes there issues from the part affected a very fetid sweat, in no shape whatever acid, having the power to stain silver black, which is yet attended with considerable relief; in which case, (see §. 1261.) it appears that a septic acrimony is rather to be blamed.

Whence nodi, tophi, and chalk are generated.] Concerning these, see what has been said at §. 1261. where they have been considered at sufficient length.

Why a fit without any swelling is the most painful, &c.] Because what occasions the pain resides in the most minute vessels, which being distended bring on the greatest torments: for, notwithstanding we rarely meet with that kind of gout where a paroxysm finishes its whole course without a swelling, it is however certain, that in the beginning of a fit there is neither swelling nor change of colour upon the part affected; and yet at this time the patient feels the highest degree of pain, which becomes easier as soon

as ever the swelling begins to appear. In the tooth-ach, while the small fibrillæ of the nerves, dispersed through the substance of the teeth, occasion the highest degree of torment, immediately as the cheeks begin to swell the pain is relieved. See what has been said at §. 1261.

Why at last the pain ceases.] Whilst the strength remains entire, and of sufficient force to derive the morbid matter towards the usual places, the pains are then very sharp and strong; but when by old age, or long continuance of the disease, the powers are weakened, the patients then hardly feel pain, but are worn away with a kind of sickishness: whence the ease they have at this time, from the pain, is no sign of the disease being diminished, but of their strength being impaired; as will farther appear, by turning back to what has been said at §. 1261, 1273.

Why the intervals are the longest, &c.] Because the whole morbid matter is thrown upon the joints, and a longer space of time required to collect matter sufficient to produce a new paroxysm.

Why when the violence of the pain ceases, &c.] When the powers are no longer able to deposite the morbid matter upon the joints, there remains some morbid fomes, which can never after be entirely dissipated; whence they feel almost perpetual, though gentle pains, and live, for the most part, only to be miserable; till at length they fall away with weakness and perpetual sickishness; or the morbid matter lays hold on the viscera, and puts an end to their lives.

Whether there be any alkaline absorbent, &c.] The chemists, who are often too hasty in forming general axioms from a few particular experiments, observing the good effects of alkaline salts in a gout arising from an abuse of acids, immediately concluded, that every gout might be cured by these alone. But we have already shewn, that an acrimonious acid does not always prevail in this distemper: and yet, at the same time, we must allow, that alkaline salts may, by their gentle dissolving power, be of considerable benefit, even where

where there is no acrimonious acidity, as was observed at §. 1275, n^o 2.

Why Sanctorius's statical chair, &c.] Every one knows that Sanctorius, by means of a statical machine or chair, demonstrated how much a person in health perspired in a given time, and from the quantity of increased or diminished perspiration could determine what might be either hoped or dreaded with regard to the prognostics of diseases. But there being few who could either make a proper use of his machine, or might even be inclined to put themselves to that trouble, he has therefore very judiciously subjoined, at the same time, an account of the sensible changes produced in the body, in consequence of the perspiration being either too much increased or diminished, and which might be obvious to every one's capacity and observation. Thus any one who pleases to bestow a little attention, without having such a machine, may be sure to reap the fruit of Sanctorius's laborious observations, to which the ingenious Lister, de Gorter, and others, made afterwards such considerable additions and improvements. Sanctorius, at the same time, has marked out what particular meats and drinks, affections of the mind, &c. and in what manner, they influence insensible perspiration. Therefore a physician, or even the gouty patients themselves, may to very good purpose regulate the use of the non-naturals according to the rules he has laid down.

But, that a free and easy perspiration is of the greatest consequence in the gout, appears evident from the whole history of the disease. For among the causes enumerated at §. 1255, were reckoned watching, excess of good cheer, immoderate venery, sweaty feet exposed too suddenly to cold. Besides, if the symptoms that usually precede a paroxysm be considered, we shall find among them a good many signs of obstructed perspiration. And the same thing may be said of those mentioned at §. 1258. which were observed to accelerate a gouty paroxysm: for almost all these, according to Sanctorius, greatly diminish perspiration. Add to all this, that, (as we observed before at §. 1261.)
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the gouty pain always terminates by a gentle moisture on the part affected : and at §. 1272. it was shewn, that sudorifics, when skilfully administered, might be of very great service ; which was still farther confirmed by what was said at §. 1276. Whence Sanctorius^t observes, “ that in gouty people, the humours, even “ of the thickest sort, were only to be resolved by way “ of vapour.” In the summer months it is, as being favourable to perspiration, that gouty veterans have their only enjoyment ; they droop and languish at every other season : nay, we have seen in a former paragraph, that in order to recall a gouty disorder, which had gone inwards, back to the joints again, physicians had placed their sole hopes in the patients being laid in a warm bed, well covered up, to procure a breathing sweat.

Whether residing in the vital spirit, &c.] It was before observed, that the morbid character lay concealed in the most subtile and finest of all our humours, in parts the smallest and most nervous. Hence Van Helmont says^u, it fixes, and radically adheres to the spirit of life ; and that it is secretly conjoined to the prolific matter of the semen. “ At the very time of “ copulation, the morbid character of the gout, o- “ therwise at rest in the spirit archæus, but now set “ a-stirring by the libidinous agitation, is worked up “ together with the spirit and semen, in a manner al- “ together anomalous, which Nature, being no long- “ er mistress, cannot by any means restrain so far, “ but that some of this libidinous characteristical poi- “ son shall, by way of ferment or leaven, infect the “ seed. Therefore, as the gouty semen, or charac- “ ter, of course infects all the spermatic parts, it will “ very readily fall on the synovia, which is nowhere “ to be met with so pure and genuine as when two “ bones are almost joined close together. Hence the “ articulations furnish a proper residence or nest for “ the gout.” See what has been already said at §. 1255, 1265, 1267.

§. 1283.

^t De Gorter de perspirat. p. 209. n^o 88.
viventium morbus, p. 314. col. 1. text. 16.

^u In Capitulo, *Volupe*

Of DISEASES proper to VIRGINS.

§. 1283. **B**ESIDES all these various kinds of acute and chronic diseases, there are some peculiar to virgins, to women with child, women in labour, and after delivery, and also to children.

We have hitherto gone through the diseases of the Solids as well as fluids, both simple and compound, acute and chronic. But yet, besides these, there are other disorders, peculiar to that time of life when the body of a female is just ripe for conception; others again, which prevail through the whole time of gestation, from the moment of conceiving. Labour itself, however natural and regular, is often not without difficulty and hardship: and even after delivery, there is a good deal of pains required, to restore the mother to such a state of health and soundness, as that she may afterwards still continue fruitful.

New-born infants, also, are liable to disorders peculiar to their tender years, from which they are either altogether, or for the most part, exempted through the rest of life, their bodies acquiring afterwards more and more firmness, and of course becoming less liable to be affected by slighter causes.

As we are to consider each of these separately, order requires that we begin with that remarkable change observed in a female about the time that the menses make their first appearance, and consider the various disorders that usually either precede or accompany that discharge.

§. 1284. **W**HEN the body of a woman comes to its full growth, and is in a good state of health, there is usually more blood generated, than can be contained in the vessels;

this superfluous blood is evacuated from the uterine arteries under the name of the *menstrual flux*.

In the human species, the females, as soon as they are fit for propagation, undergo a very remarkable and sudden change: they grow quickly taller; their breasts begin to swell up, and ripen like sister-twins; all the marks of puberty appear upon the pudenda: from that opening, too, which is the particular mark of distinction in the sex, the blood now finds its way; and in healthy young women, the same efflux returns at stated periods; which is called the *menstrual flux*, because in the space of a month it generally renews its appearance: though at the same time some little variety takes place in different young women with regard to the intervals between each of these periods, though otherwise of the healthiest constitution; for with some the menses flow twice a-month, with some every three weeks, and with most every four. Nor is it ever observed, if virgins are otherwise in good health, that this variety, with respect to time, has the least influence on their fruitfulness, provided the periods themselves are constant, and always regular: for I have constantly remarked, that those females, who had been any way irregular in this respect, were never so fruitful, and always liable to miscarry. There is a like diversity observed as to the quantity which comes away, corresponding to the disposition and make of the uterus itself. This is remarked by Hippocrates: *The menstrual discharges in some women flow in greater abundance, in others again more sparingly: but if what flows be always of the same nature and quality, we may properly reckon it uterine*^w. Hence various names came to be given to this evacuation. From the most usual period it is called *menstrual flux*, *menstrua*, *menses*, and *catamenia*; as also *monthly purgation*, many believing that something noxious was, by this discharge, expelled out of the body: and several call them *flowers*, because

^w Mulieribus quibusdam quidem menstruæ purgationes abundantes, quibusdam pauciores, expurgantur: quod si in natura et genere semper contingat (μετρωον οτιν εστιν) ipsis uterinum est. *De Natura Puer.* cap. 20. *Charter.* Tom. V. p. 323.

because in the vegetable kingdom, as these immediately precede the fruit, so the *menstrua* are in like manner the certain signs of fertility; for on their first appearance a virgin is reckoned fit for a husband, and then said to be marriageable.

The menses, for the most part, begin to appear at fourteen years of age, seldom before the thirteenth: and they generally cease to flow about the forty-fifth; in some, however, they leave off sooner, in others later^x. All the time that the menses flow regularly, women are said to be fruitful: but upon their giving over, they are reckoned unfit to have any more children; because when once that periodical discharge is entirely stopped, they are hardly ever observed to conceive: whence the duration of the *menstrua* seems exactly to coincide with the usual term of fruitfulness. In hot countries also we observe, that girls sooner have the *menstrua*, and in like manner sooner give over to menstruate. In the more northerly regions, the very contrary obtains. Thus Linnæus^y observes, that the women of Lapland have these discharges at a certain period, but in smaller quantity: several he has seen who never had them in their lives; but these, when married, always remained barren. Some young women he had known, who menstruated only in summer, and never in winter, which in these regions is commonly very long, and very rigid. Some again had this discharge only once a-year; but all of these, whom he saw, were afflicted with œdematous swellings in their feet.

Notwithstanding, however, that the menses usually begin at the time aforesaid, yet there are a few extraordinary instances of a discharge of this kind happening even soon after birth. Thus we read of a female infant^z having such a discharge on the eighth day after she was brought into the world; according to other accounts, on the third month only: but this same girl, at four years of age, was three feet and a half in length, with all the members in just proportion; her breasts and genitals were such as they are usually found:

^x Mauriceau Traite des Malad. des Femmes grosses, Tom. I. p. 49.

^y Flora Lappon. p. 324. ^z Acad. des Scien, Par 1708. Hist. p. 638.

in girls of eighteen, so that she appeared completely marriageable. I myself saw an instance, where the menses broke out in a child only a month old; who, when she came to be seven years of age, had all the signs of maturity; and, though otherwise of a lax habit of body, yet enjoyed pretty good health, was married at nineteen, and afterwards bore several very healthy children. Various other instances of the like nature may be easily collected from medical history; whence we need not be at all surpris'd to find the women of the East Indies having children at nine years of age^a.

In like manner, the menstrual flux has been observed to continue much longer beyond the usual term, nay, even to return in decrepid old age itself, without any bad consequence attending it. Thus Daniel Perarius, a physician at Genoa, writes to Tho. Bartholine the following particular, of which he declares himself to have been an eye-witness: "A woman of
" fourscore years of age has had her menses for two
" years past, regularly and easily, without the least
" inconvenience to her health^b." We read of another instance, where the menses continued to flow to the age of an hundred and six^c. However, according to the common maxim, nothing like general rules can be formed from instances which so very rarely happen.

Seeing, then, that, by the general law of nature, the menses in women break out at a determined period of life, and that they cease spontaneously to flow at another determined period; physicians have been at the greatest pains to consider every thing that could serve to illustrate the cause of this monthly discharge, and to determine the particular places from whence the blood at this time issues: for as this flux is not continual, but periodical, there must be, when the period is near, some particular changes made in the parts from whence it flows. But as there may be good reason to suspect, that, in the bodies of those who die diseased, many things are changed by the nature and force of the disposition;

^a Ibid. ^b Tho. Barthol. Epist. Med. cent. 4. p. 432. ^c Acad. des Sciences, in loco modo citato.

temper; so the fairest opportunity appears for an investigation of this kind from inspecting the bodies of such as, during their menstrual discharges, have been taken off by a sudden or violent death. Columbus^d would have it, that the menstrual blood came not from the vessels distributed to the womb itself, but from those “ which are laterally inserted into the neck of the “ uterus:” and somewhere else he says^e, “ As I have “ often seen, with my own eyes, in women who have “ suffered a violent death, while their menses were “ yet upon them; and not in these only, but in others “ where the period was at hand and just ready to “ break out.” But this he thought that he had in a more particular manner observed in a woman, who was executed for the murder of her children, having a month before this borne twins, and as soon as they were brought forth into the world smothered them; for in her body he shewed, to a great number of spectators, that these veins, “ which in others appeared “ of no remarkable size, were here very large, and of “ a very black colour, which made them the more “ distinguishable.” Whence he concluded, that the veins, through which the menstrual blood passes, had, by no means, any immediate connection with the substance of the uterus itself.

There are other observations, however, and these indeed far more deserving of credit, which demonstrate plainly, that the menstrual flux proceeds even from the uterus itself, and particularly from those vessels which are distributed upon the fundus. Thus Mauriceau^f, examining the body of a woman, who during the time of her menses was hanged for child-murder, found the whole cavity at the bottom of the uterus covered with little clots of coagulated blood: the vessels distributed upon these places were much larger than those which appeared on the neck of the womb; and their orifices, which opened into the cavity of the uterus, were plugged up with grumous blood. This also is confirmed by the observations of the celebrated

^d De Re Anatom. lib. xi. p. 243.

^e Lib. vi. p. 173. *ibid.*

^f Traite des Malad. des Femm. gross. &c. Tom. I. p. 48.

Litre^s; for in the body of a woman, who, having a conception lodged in the tubæ Fallopiæ, died during the flowing of the menses, he found the uterus pretty much swelled, and covered over with concreted blood, of a bright-red colour; which being removed, he could discern a great number of small foramina, that could easily admit a hog's bristle, each of which appeared to be filled with this same bright red-coloured blood, which, by pressing the substance of the uterus with the fingers, might be squeezed out in drops. He afterwards examined all the internal surface of the vagina, with the greatest care; but nothing like this could be found there: whence he concluded the menstrual flux to proceed from the cavity of the uterus itself, and not from the vagina. He also assures us, that he had seen the same confirmed by the dissection of several other bodies of women that died whilst under the menstrual discharges; and what seems to put this opinion beyond all question, in three cases of a *prolapsus uteri*, where the orifice of the uterus came down as far as the lips of the pudenda, he saw the menstrual blood issue out at the orifice of the uterus, while not one drop came from the cavity of the vagina.

That very accurate anatomist Morgagni^h accedes likewise to this opinion; having had occasion to see in a girl, who from a stroke on the head died suddenly during the flowing of her menses, the whole bottom of the uterus full of bloody spots, of which he has given us an engraven representationⁱ; from which spots, even with the slightest pressure, it was easy to procure some drops of blood: yet, neither in the vagina, nor in the neck of the uterus, could any thing upon examination be seen, that looked in the least like blood, issuing from the sides of these particular parts. Besides, in the bodies of several other women, which afterwards he had occasion to examine, and whose menses had, as he guessed, been lately upon them, he could perceive the same spots on the bottom of the uterus, of a fainter colour, from which

^s Acad. des Scien. 172. Mem. p. 281, 282.
p. 45, 46.

ⁱ Ibid. p. 3.

^h Adver. Anatom. I.

which he was able to procure some drops of a bloody tinge, but tried in vain to procure any thing like this from the neck or from the vagina. Mean while, he is unwilling to deny but that there may some menstrual blood be also poured out from the sides of the vagina, since many authors of considerable name and credit affirm that they had seen it; several of whom he mentions. Thus Piso^k has told us, that, “in the
“body of a girl that had been strangled during the
“flowing of her menses, and publicly dissected here
“some years ago, the inside of the pudenda only ap-
“peared to be moistened and tinged with menstrual
“blood, while the uterus was found entirely dry,
“with the sides pressed close to each other.” Heister^l observes, that in the body of a woman which he saw, who died during the time of her menses, the menstrual blood issued both from the cavity of the uterus, and from the vagina.

Seeing, therefore, that according to what the celebrated Winslow^m has demonstrated, the membrane, which covers the bottom of the uterus, is perforated by a great number of small foramina, obvious even to the naked eye, from which, upon slightly pressing the substance of the uterus, the blood is easily forced out; if it is besides considered, that this same membrane is of a villous texture, resembling velvet; and that this villous surface, together with the foramina, are more or less tinged with blood in women who have died during their menstrual discharges: and lastly, if we add to these, that water or injections of coloured wax, when thrown into the arteries, come out at their extremities into the cavity of the uterusⁿ: there seems to be good reason to conclude the internal cavity, and particularly the bottom of the uterus, to be the true natural place from whence the menstrual discharges originally issue. However, as the whole pudendum and vagina in women ouze out constantly^o a fine, soft, watery, serous liquor, from the
extre-

^k De Morbis ex Colluv. Serosa, sect. ii. p. 2. cap. 7. p. 131.

^l Mé-
dicin. Chirurg. Anat. Wahrnehm, p. 840.

^m Exposit. Anat. de la
Struct. du Corps Humain, p. 574.

ⁿ Kaau Perspirat. diGæ
Hippoc. p. 98.

^o Ibidem, p. 96.

extremities of these very little strait arteries which open into them; and as they are provided with blood-vessels similar ^P to those of the uterus itself; it does not seem at all impossible, but that even blood may sometimes issue out from the dilated extremities of these vessels: and in women with child, who during their pregnancy have these discharges in smaller quantity, it is perhaps from these vessels of the vagina, that the blood comes away without any inconveniency following; for if it flowed from the cavity of the uterus, a miscarriage would most likely be the consequence. I have had occasion to see many in the situation abovementioned, who notwithstanding, at the due time, brought forth hale, strong, and healthy children.

What we have next to consider, are the different opinions that have been formed by the most eminent physicians, concerning the causes of this menstrual flux, and the reasons why in healthy young women the same flux returns at fixed periods.

Physicians, when they saw pure blood issue out in this manner from the soundest body, without the least detriment to health, but rather giving a kind of ease; and at the same time observed, that young girls grew sooner up to their due stature than boys; and that the menstrual flux gave the first signs of their fitness to conceive, and to nourish the foetus when conceived, all the time of its growing from a small speck, or first rudiments of a human creature, till at the end of nine months, having attained its proper size, it is at last excluded in the natural way of labour; and that all this increase of the foetus must be wholly nourished by the humours of the mother; it appearing plain, that a female body, besides itself, had to maintain another human creature all the time of gestation: From all this, therefore, they concluded, that in women who were not with child, there must be more blood generated than was needful for their own nourishment; and that it was requisite this superfluous blood should be evacuated some other way, lest, by being accumulated, it might prove injurious to their health.

health. Aristotle^a has long ago observed, “ that in “ women, all superfluous blood is converted into “ menstrual purgation.” What farther confirms this opinion, is, that mothers who suckle their own children, commonly never have these discharges during the whole time of giving suck; or if they have, it is at least at long intervals, and only in very small quantity, because this superfluous blood is converted into proper nourishment for the child, namely, milk. Women, whose bodies are daily exercised in hard labour, menstruate but seldom; whilst, with such as live in an easy, plentiful way, the menses flow every month, and sometimes oftener. This has been already taken notice of by Moschio^r, whom we shall have frequent occasion to mention hereafter. This author is a different person from that Theodore Moschio cited by Pliny, Galen, Aëtius, and Trallianus: For our author is much more modern; and published a book of Midwifery, containing thirty-two chapters, translated from the Latin, for the use of the Græcian midwives. As it contains several excellent things in that way, it has a place in most collections of books on womens disorders, that treat, for example, of the particular symptoms and diseases, either of pregnant women, such as are in labour, or those who are recovering from childbirth. But since Israel Spachius, in the year 1597, published his collection, posterior to the two former ones by Caspar Wolf and Caspar Bauchin, and as it contains a good deal more, I have chosen to follow his collection of books on female disorders^s.

Hence we see what a number of reasons there are, which might induce physicians to think the menstrual flux to be owing to a plethora. If there is then no plethora generated, as in women very robust and injured to hard labour, then of consequence the menstrual flux may naturally, and without any inconvenience, be wanting. Of this sort are those of whom Moschio^t, in recounting the various causes of obstructed

^a De Hist. Anim. lib. vii. cap. 2. Tom. II. p. 355. ^r Spachii Gynæcor. p. 2. n^o 16. ^s Vid. Fabric. Biblioth. Græc. Tom. XII. lib. vi. cap. 7. p. 696, et seq. ^t Spachii Gynæcor. p. 11. n^o 126. et Harm. Gynæc. part. poster. cap. 2. p. 20.

ted menses, says, “ that, without any infirmity or prejudice to their health, they have no such discharge at all.” Fernelius affirms, that he saw a woman^u, “ who, notwithstanding she never had any menstrual discharge, or any thing like it flowing from the uterus, yet kept very well in health, felt no inconvenience, and lived to the age of sixty.” Hildanus^w cured a woman, forty years of age, of a grievous hurt by a fall, who declared to him, by all that was sacred, that she never had menstruated either during her virginity or in her married state. Her lochia too, when in childbed, flowed but very sparingly: for she had brought forth seven children; of whom the greater part were then living, strong, and in sound health. She herself had been of a firm, robust make of body, hardly ever liable to sickness of any kind, and, with a very scanty kind of spare diet, was daily obliged to go through a deal of hard labour; whence all opportunity of a plethora collecting was entirely taken away. Thus we read of a country among the Tapuyas in Brasil, where the whole race of females never in all their lives have the least appearance of these discharges^x. And other travellers observe, that the women in some countries have them very sparingly: as the Laplanders, which we mentioned before. Many more examples of the like nature might perhaps be found in our own country, which, as Pechlin^y observes, “ the sex keep to themselves, and do not easily discover to physicians, who are themselves again unwilling to make such discoveries public, even where their testimony may be needful.” From a consideration of all these circumstances, the celebrated Astruc^z was almost inclined to believe, that women, according to the primæval law of nature, were by no means subject to so copious a menstrual discharge; seeing that, in countries where a scanty spare living obtains, they flow but sparingly, and in some never at all: but in nations more civilized, the fair sex live with

^u Pathol. lib. vi. cap. 16. part. ii. p. 197. ^w Oper. Omn. Obser. cent. v. p. 428.

^x Guait. Charletoni de Causis Catamen. cap. 4. p. 39. ^y Observat. Physic. Med. n^o 35, p. 83. ^z Traite des Malad. des Femmes, Tom. I. p. 83.

with more delicacy, in greater ease and abundance, enjoying all the luxuries of a plentiful table; whence a greater quantity of blood is accumulated, which, from the uterine vessels, flows regularly at stated periods.

In the mean time, however, the menstrual flux seems ordained by nature to happen at a certain time of life, not only to relieve the body of a superfluous quantity of blood, but also to dispose the *uterus* in a proper manner for conception. But whether the women, in countries where they never menstruate, do all nevertheless continue fruitful, is a question that may very well admit of doubt. The writers of travels often relate things only by hearsay, having for the most part neither opportunity nor inclination to examine properly into matters of this kind. Linæus, as we said before, found that the Lapland women menstruated in a smaller quantity; at the same time he remarks, that those who never had this discharge were always barren. As to that widow^a, at forty years of age, who, though of a firm make of body, and very healthy, had felt no inconveniency from having never had the menstrual discharge; yet on a second marriage, at the first copulation, the menses came down, and for two years together continued to flow regularly at stated periods before she conceived: at length she was safely delivered of a child, born at the full time; and gave three proofs more of her fertility, before age had put a stop to them altogether. Whence it seems reasonable to conclude, that the plethora, by the blood passing at the open orifices of the arteries, is greatly taken off, and therefore this discharge must be different according to the greater or lesser quantity of accumulated blood; but at the same time this dilatation and opening of the uterine vessels appears to contribute towards fertility, as we shall afterwards explain in its proper place.

Physicians besides imagined, that, from the structure itself of a woman's body, there appeared sufficient reason, why this superfluous blood should be discharged

charged by the *uterus*, rather than by any other part of the body: for if the bony fabric of a woman's *pelvis* be considered, we shall find it remarkably different from that of a man's, and considerably more capacious. The *vertebræ* of the loins go farther backwards: the distance between the *os sacrum* and *os ileum* is greater; so is that between the *ilia*: the *os coccygis* is straighter and more flexible than a man's, which is bent a little more forwards; the bones of the *pubis* are joined to each other at an obtuser angle: besides, the protuberances of the bones of the *ischium* stand out from each other at a greater distance; whence the necks of the *femora* have a more transverse position, and make less acute angles with the *acetabuli*. Hence there is a larger space all about the female *pelvis* than in the male, that the enlargement of the *abdomen*, in women with child, may be more firmly supported. This diversity of structure in the female body, painters and sculptors, who are skilful in their art, know very well how to express^b.

The uterus, which is wholly vascular, is situated in this broad ample pelvis, between the bladder and rectum, almost entirely loose, and undergoing very little pressure: for the whole bottom of the uterus rises up into the abdomen in time of pregnancy, and in a prolapsus uteri often goes down so far as to be protruded without the lips of the pudendum: besides, the uterus may slide forwards, backwards, and sideways, as we shall see when we come to speak of difficult labour. Now, although in young girls, and grown-up maids, the uterus is perceived to be firm and solid to the touch, yet the effects of pregnancy shew that the vessels can easily give way, and be dilated to a surprising bulk; as the uterus, at the end of gestation, appears like a sponge filled with blood; while the vessels, which before conception were hardly to be seen, can at this time sometimes admit the end of the little finger. The uterus, moreover, receives a great number of arteries from the spermatics, hypogastrics, hæmorrhoidal and external iliacs. It is supplied by a like
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^a Vide de his, Boerhaave Instit. Medic. sect. 663.

distribution of veins derived from the same origin, all destitute of valves, and communicating with each other; which is likewise the case with the uterine arteries, whence a free circulation of a larger quantity of blood is carried on without the least impediment. At the same time, the interior cavity of the uterus is pierced by these minute openings, which pour out a thin, soft, lubricating moisture, which waters the internal surface, and keeps the sides of the cavity from adhering together^c.

All these things, which regard the situation, vascular fabric, and ready expansion of the uterus, being clearly understood, it was next considered, that females sooner come to their utmost pitch of growth than those of the other sex, and yet their viscera still go on to extract from the aliments the same quantity of good nutritive humours as before, which, however, is no longer to serve the purposes of enlarging the stature of the body, as formerly; and since it is observed at the same time, that womens bodies perspire less than mens^d, hence it will follow, that a quantity of wholesome sound humours must be stored up in the vessels, and so a plethora must be generated; useful indeed, where a woman, becoming pregnant, has not only her own body, but the child's, to support and nourish; but very hurtful, on the contrary, where this is not the case, were it allowed every day to increase in this manner, and no salutary outlet or provision made to carry it off, without injury to the body. Such a superfluity, therefore, is absolutely necessary, in order that a woman may always be in a condition to conceive and nourish the fœtus: there must also be such outlets to carry out that superfluity, at the time when a woman is not in either of these situations.

Seeing then that the uterus is wholly vascular, placed in a loose free situation, easy to be dilated, and has a cavity fit to receive the superfluous humours till they are afterwards expelled by the os uteri; hence

VOL. XIII.

T

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^c Vide de his Herm. Boerhaave Instit. Medic. sect. 664. sect. 662.

^d Ibid.

therefore the vessels of the uterus, being gradually more and more distended by the increased quantity of sound humours, are at length dilated so far, that their open extremities, which formerly transmitted only a dewy moisture, increasing now their diameters by degrees, send forth even the red part of the blood into the cavity of the uterus, and so the menstrual flux follows of course; the secretion and excretion of which is also greatly assisted by the erect manner of walking peculiar to females of the human species.

But after the plethora is once lessened by the discharge of blood from the uterus, the vessels, being no longer distended, contract themselves by their own effort into lesser diameters: in this degree of contraction they allow no longer the red part of the blood to pass, but only the thinner humours; and thus the minute extremities of the vessels which open into the cavity of the womb, return to their former dimensions, till, the plethora being renewed by the same causes, they are again dilated at similar intervals of time. In this manner was the periodical return of the menstrual flux explained; which at the same time served pretty well to illustrate all those circumstances which usually precede, accompany, or follow upon this discharge. Concerning all which the celebrated Dr Friend has copiously treated^e; bringing it even to an exact calculation, how much is daily accumulated, in a female body, towards forming this plethora, which is to supply a sufficient quantity of menstrual blood, without prejudice to the body; what is superabundant, in women that are not pregnant, being thus thrown off, and gradually increasing again as it approaches the monthly period. He^f endeavoured farther to support his opinion, by observing, that where the menstrea were obstructed, the blood attempted to get out at various other passages, and that by similar means the plethora might be taken off at any time.

This manner of explaining the nature of the menstrual flux was thought so simple, so correspondent to every circumstance and appearance, and founded on laws

^e Emmenolog. p. 21, et seq.

^f Ibid. p. 55.

laws common to all bodies, that it was received by numbers, as an account altogether evident, and the most agreeable to truth. In the mean time however, when all these arguments are again weighed and brought to the test, we shall perceive a number of difficulties yet remaining.

Those who deduce the cause of the menstrual flux from a plethora arising, for instance, in a girl's body, when she has arrived at her full growth, do not seem to have considered how frequently it happens, that girls grow remarkably taller and bigger after having had several regular periods of the menstrual flux. When I had read, about thirty years ago, that ingenious treatise on the system of the womb^e, by the celebrated Dr. Simpson, who makes the above remark, I was led to consider this more attentively; and from what I have seen since, am more and more persuaded of the truth of what he has there asserted: For after the first menstrual periods, there is, for the most part, a remarkable additional increase to the body; though I have seen some, whose menses had begun to flow only at eighteen, or later, who never grew one bit taller afterwards. I am likewise of opinion, that the increase of the human body, according to what I have observed, does not always proceed in so regular and gradual a manner as is commonly imagined. That the human body, the nearer it is to its origin, has a proportional quickness of growth, the fœtus sufficiently demonstrates, which in nine month's time, from the smallest molecula, grows to so remarkable a bigness. But in the progress of life, I have seen great diversity with regard to the degrees and quickness of growing. About the time of puberty, though in some later, there is frequently observed so sudden an increase of stature, that even in a few months the body shall grow taller than it had done for two years together before that. It is very well known, that young people, when seized with feverish disorders, especially the acute sort, if they happen to escape, grow taller as they recover. This hath been explained from

the force of the fever impelling the humours, and by that means stretching out and lengthening all the vessels, whilst the bones at the same time, not having as yet acquired the full hardness, easily yield to the same impressions. But when the disease is at an end, this cause of the sudden growth ought of course to cease; and yet, from what I have seen, the principal increase of stature has generally happened some time after, rather than during the continuance of, the disease. I recovered a young man of sixteen years of age, rather very diminutive for his years, from the small-pox, which were of the distinct kind, though very numerous: the length of his body, during his illness, was increased somewhat indeed, though not very remarkably; yet the growth went on so fast, that when I saw him three years afterwards, I scarcely knew him; for he had not reached his twentieth year, and yet was grown six foot high. A few months ago, I took care of a girl in the small-pox, of a mild sort, and not very numerous: there was a slight fever at first, when she was seized; which on the eruption went off, and never returned during the whole course of the disease: her body not only grew during her illness, but the growth went on for five months after it was entirely gone off, without any prejudice to her health, her stature and firmness receiving both a remarkable increase. Hence there appear to be other causes of the body's increase, which cannot be so easily explained by any thing which as yet we know of the human system.

Another argument brought by Dr. Simpsonⁿ, to prove that the menstrual flux does not arise from a plethora, is this: Dr Friend supposes a plethora to be gradually accumulated so much every day, between each menstrual period; relying principally on what Sanctorius has asserted, to wit, that even in mens. bodies there is the increase of a pound weight or two every month. Now Keill's tables demonstrate quite the contrary, to wit, that in healthy bodies there is no such daily equable increase of the humours; but
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ⁿ Ibid. p. 6, &c.

that, on the contrary, the greatest variations take place here, with regard to the weight being either diminished or augmented: and no wonder, when we see so great a variety in respect to the quantity of food taken down, and what passes out of the body, even in the healthiest.

Besides, if the menstrual flux depended upon the gradual accumulation of a plethora, the periods would be necessarily retarded whenever the quantity of humours was lessened by any evacuation or when this accumulation was hindered by starving or abstemious diet; whereas Dr Simpsonⁱ frankly appeals to the testimony of all physicians, the least conversant in practice, whether ever they have seen an instance where the periods have been kept back by letting blood during the intermediate interval. Certain it is, that opening a vein in many diseased, or even in healthy women, who have been accustomed to let blood, rarely alters the usual periods. Nay, as I have several times seen myself, it has sometimes even accelerated them. Hoffman^k from repeated experience affirms, that, "it is a common thing to see letting of blood, before the usual period, occasion a freer discharge of the menstrual flux."

From a consideration of these difficulties, Dr Simpson denies a plethora to be the cause of the menstrual discharge, and proposes another. He thought that the body did not give over growing because the parts themselves gradually became firmer, and so were better able to resist any farther extension or elongation, but because the powers which served to elongate and extend were impaired in their strength: for as long as there is a greater degree of resistance towards the extremities of the vessels that are flexible, the liquors impelled through these vessels, by the force of the heart, will distend and lengthen them the more; and on the other hand, when there is less resistance, and the passage through these vessels is freer, their distension and elongation must be less. Therefore he reckons the body then to arrive at its acme, or full growth,

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ⁱ Ibid. p. 9.

^k Med. Rat. et Syst. Tom. II. p. 464.

when all the vessels are in the freest, most pervious, and open state, and easily giving way to the impelled fluids: whence he concludes, that the growth doth not cease because the parts can no longer yield, but because the force and efficacy of the distending powers are lessened or very much impaired.

He endeavours to support his opinion, by taking notice, that in an adult, if there arises any obstacle to the free circulation of the humours from an obstruction in any of the viscera, then these viscera are immediately increased in their bulk, as in the liver, spleen, kidneys, &c. which appears from innumerable medical observations. So in steatomatous tumours, the more the matter secreted from the blood is accumulated in the follicle, the more it presses the neighbouring vessels: these vessels again increase in their size, the more they are distended by the impulse of the blood, thus hindered in its free circulation¹.

From these considerations, therefore, he concludes, that the menstrual flux itself is the reason why the uterus comes to its own full growth, and then gives over growing. For when once the blood is poured out into the cavity of the uterus, from the vessels which open either directly into it, or by means of the sinuses within its substance, then there is at this time the freest circulation of humours through the uterine vessels, and therefore the power which distends and lengthens the vessels then ceases: but when the uterus is impregnated, the chorion and placenta, firmly adhering and growing to the internal surface of the uterus, stop up the free passage of the blood into its cavity; in consequence of which the uterus begins to increase anew, and acquires a most remarkable addition to its bulk.

Again, he maintains the gradual increase of the uterus at first to be the cause of the irruption of the menses: for there was always a secretion of thin liquid within the cavity of the uterus, to moisten it, and keep the sides from growing together. Now these minute exhaling vessels, being at first very small, and
being

¹ Simpson's System of the Womb, p. 27, &c.

being more and more dilated as the uterus grows, transmit at last the red globules of blood: then begin the menses to flow, which may very well happen without a universal plethora of the whole body. But as the blood has now a free passage through these dilated orifices, the resistance to the blood, propelled through the uterine vessels, is taken off; consequently the dilating cause ceases: they contract themselves by their own proper effort, till at length, allowing no more red blood to pass, they secrete only the finer liquids as formerly; hence the menstrual flux spontaneously ceases^m. From the same way of reasoning he explains why the menstrua, in strong robust women, give over sooner: because the texture of their vessels being firmer, while the dilating power is at the same time weaker, must occasion an earlier and stronger contraction of the vessels; while women, on the other hand, of a soft and delicate texture, have frequently a long and copious discharge. But since the contraction of the vessels, after the evacuation, puts a stop to the red blood, and makes the flux cease of course; here is again another cause, namely, the greater resistance of the vessels, which at a certain time, by gradually dilating these canals, must renew the menstrual flux, which therefore, on that account, will return periodically. The ingenious author however very candidly owns, he cannot so easily explain by this, why, in most women, the periods of the menstrual flux should return commonly at the distance of a lunar month from each other. The menstrual flux, according to this account, depends not on a plethora of the whole body; but rather on a particular plethora of the uterus, when so great a number of vessels, that were before only pervious to the thinner part of the blood, being now gradually dilated, admit the red blood itself; which dilatation, when it takes place at the open extremities, communicating first with the sinuses in the substance of the uterus, or more directly with the cavity of the womb itself, then the menstrua begin to flow: therefore it is plain, that before the flowing of the menses,

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^m Ibid. p. 54.

the vessels must be distended by a greater quantity of blood, and a lesser quantity will be carried back by the returning veins; and so a particular plethora may prevail in the uterus, even although there is no superfluity to be found in any other vessels of the bodyⁿ.

It must be acknowledged, that most of the phenomena, with respect to the menstrual flux, seem to be more happily explained by this opinion, than by that which maintains an universal plethora to be the cause of that monthly discharge. Hence we are not to be surpris'd that this same opinion, of a particular plethora, should be embraced by several persons of the greatest eminence in the profession. Thus the celebrated Astruc^o, who has written upon the subject but very lately, adopts this opinion, though he explains it after another manner^p; and thinks, that the menstrual blood issues out of the uterine veins by certain venous appendices, which he calls *cæcales*; and which, being corrugated at their extremities, retard the blood in its passage, but are forced open during the menstrual discharge by the pressure of the accumulated blood in the uterine veins, which of course finds its way in this manner. But notwithstanding this explanation may seem very ingenious, I must beg leave to suspend my assent, (under favour of so great a man, from whose ingenious writings I gratefully acknowledge myself to have received much useful instruction); since, at least, he has taken some things for granted, which do not seem as yet to be sufficiently demonstrated by anatomy.

I frankly acknowledge, that our profession owes a great deal to mathematical and physical reasoning in general, by which the common properties of bodies are explained; and, provided the data are certain, the theory built thereon cannot be liable to any mistake. The laws of hydraulics may be very properly, on some occasions, applied to the human body, as it consists of canals, and liquids moving through them, having their sinuses, receptacles, &c. But yet I do not think that

ⁿ Ibid. p. 60. ^o Traite des Malad. des Femmes, Tom. I. p. 39, 48.
^p Ibid. p. 1, et seq.

all the phenomena can be explained by hydraulics. Our canals have a living principle in them. They are indeed dilated by the liquids impelled by the force of the heart, and by their own elasticity return again to their former diameters; yet our vessels are acted upon by other causes besides these, that can neither be understood nor explained from hydraulics. Several ingenious men have endeavoured to determine the proportion the trunks of the vessels bear to the branches, and the branches to each other, and the diversity of angles by which the different branches go off from the particular trunks, &c. But even these are not sufficient for understanding all the particulars to be observed in our bodies. By a change of thought alone, our canals are in a moment changed all of a sudden, so that they shall be quickly dilated, and contracted again as suddenly. We see a person in perfect health and tranquillity, when suddenly struck with terror, quickly turns pale, and the blood-vessels of his face, which formerly allowed the blood to pass freely, now seem not to admit a single drop. Let any one throw out an immodest expression before a bashful virgin, not only her cheeks, but her whole face, neck, and shoulders, grow intensely red. When any thing of a stimulating nature is applied, even externally, to the body, the arteries immediately beat both stronger and quicker; concerning which effects we have already discoursed at §. 382. in the History of Inflammations, and elsewhere. But even in the menstrual flux itself, how oft does it happen, when checked, as either by a sudden fright, or unexpected disaster, that it can hardly at all, or at least with the greatest difficulty, be again reduced to any regularity! These, and many other similar reasons, incline me to think, that all the things which happen in the human body cannot by any means be explained by the general principles of bodies, from knowing ever so well the particular structure of the parts: by observation alone we know that they are so; though how, or in what manner, they come to be so, we are altogether ignorant.

For whatever opinion be received concerning the
cause

cause of the menstrual flux, whether an universal plethora, or that particularly of the uterus alone, or whether it depends on some peculiarity of its structure still this difficulty will always recur, why the uterine vessels should be filled and distended, and then opening should pour out the blood in this manner at a certain time of life, and not before, and why this evacuation should return again at so exact periods. The uterus, we see, even in virgins that have already menstruated, is firm and pretty solid to the touch; neither do they look as if they could be so easily distended. But (as I have already remarked on another occasion, §. 1265.) there are many such instances to be observed in the human body, where parts for years remain unaltered, and then, afterwards, shall all at once begin to increase, and be quickly changed. The teeth, which appear at seven or eight years of age, or sometimes later, and which in the jaws of abortions we find already formed, grow slowly, when compared to other parts of the body; yet have a very sudden growth, when at their own proper season they are just ready to break forth. The little roots of hair lie long concealed underneath the skin of the pubis, without growing; but in both sexes sprout up and increase quickly at the time of puberty.

Certain it is, however, that the body, about the time it becomes to be fit for generation, undergoes surprising alterations, insomuch that physicians entirely trust sometimes to the age of puberty alone for the cure of several of the most obstinate distempers, which they never could obtain by the power of any other remedy whatever, as in the History of the Epilepsy, and many other places, we have already remarked. Physicians were by no means ignorant that such changes really happened at this time, but as yet no one whatever has clearly explained how these changes are brought about.

From comparative anatomy it appears, that in animals, when the season of generating approaches, and they swell with venereal rage, the genital organs are surprisingly altered. We have an account in Reau-

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mur^a, from the observations of Sarazinus, of a rat, which, from the smell of musk issuing from it, is called the musk-rat. He gives an exact description of the structure of this animal's genitals at the time of their going to copulate, as they are to be seen, for example, in the months of April or May: for it was something curious to observe how the size of the testicles, epididymis, and vesiculæ feminales, diminished in proportion as the venereal orgasm went off, and disappeared almost towards the middle of autumn and the whole winter season, changing their colour, situation, and figure entirely. But it is also observed, that in animals which generate only at particular times of the year, the uterus is surprisingly changed, sending forth a liquor from the pudenda frequently very copious, and sometimes mixed with blood; these animals being generally satisfied at that time with one or two copulations: in this case, therefore, we see the vessels must be dilated, and let humours pass which could not escape before. Will any one pretend to explain, *a priori*, how the vast number of yolks, contained in the egg-bed of oviparous animals, which before a hen begins to lay are hardly the size of a pin's head, shall afterwards increase so suddenly, not all at the same time, but in succession, so that in the belly of a hen that is laying we shall find eggs of different sizes; and yet all these eggs are supplied with humours from the very same vessels? In fishes, the small guts and roan, or heap of innumerable eggs, plump up their bellies at some certain seasons; at others they fall away, and almost entirely disappear: every kitchen may convince us of the truth of this. Whence the affair of generation, and all things pertaining thereto, seem not as yet to admit of any clear intelligible method of explanation. From the faithful observations of several great men we have many valuable facts; but a knowledge of these facts does not yet appear sufficient to understand the manner how they come to be produced.

We see that a variety of very ingenious reasons for the menstrual flux have been proposed by several eminent

^a Acad. des Scien. 1725. Mem. p. 486, &c.

nent men, well acquainted with the structure of the human body, by which some phenomena, though not all, have been pretty well accounted for. Let us then make use of such as are certain, and only take care that we build no practical rules on those that are dubious.

That the menstrual flux in women is a certain sign of fertility, all physicians are pretty unanimously agreed. It is observed naturally to flow at that time of life when the body is ready for conception, and able to contain and nourish the foetus: it leaves off again, when, through years, the body is no longer able to perform this office; and then women are said to be past child-bearing. But, as in both sexes the power of generation is not limited to a certain season as in brutes, but is the same at all times of the year, hence the uterus in women is watered every month by the menstrea, whilst in brutes the uterus and pudenda throw out their humours only at that particular season when they are stimulated by their venereal appetite: neither is that, which proceeds from them, purely bloody and unmixed; but is only seen sometimes of a bloody tinge, and that not constantly. But in a female of the human species, she is no sooner pregnant, than the uterus is gradually extended; nor does it appear the thinner from this extension: hence there must be a greater quantity of blood contained within its vessels, so that in the last months of gestation we see it resembles a sponge filled with that fluid; and therefore, in women that are fruitful, there must always be a quantity of blood ready to fill the enlarged vessels after conception; and lest this quantity of blood should overload the body when women were not with child, it was necessary to have certain outlets, by which it might always be commodiously evacuated.

The foetus, besides, inclosed within its membranes, is connected, indeed, to the whole interior cavity of the uterus, but more especially, by means of the placenta, adheres in a firmer manner to the bottom, to which this placenta commonly grows very fast. By this menstrual flux also, which, as we have already said,

said, proceeds principally from the bottom, the sinuses and uterine vessels are so disposed, as to allow the placenta, to be, as it were, implanted in them. Whence, also, Galen was of opinion, that *conception happened particularly when the menstrea were newly stopped, at which time they chiefly conceived the seed of the uterus*^r. The reason he gives in another place: *The mouths of the uterine vessels, which go towards the internal surface of the womb, and from whence also the menses flow, are opened when a woman is about to conceive: but this only happens either at the beginning or end of the menstrual flux. They are also open during all the rest of the monthly purgation, though women, at this time, do not so readily conceive; for the semen cannot then remain in the uterus, as it must be washed away by the stream of menstrual blood. But when the menses are either going off, or beginning to flow, the mouths of the vessels are open; and they do not flow too rapidly, or in any great quantity; but sparingly, and by gentle degrees*^s. The same thing, with respect to the menstrual flux, we read in Moschio^t, that it prepares a fit and convenient place for the reception of the semen.

But as there are humours which flow down from the pudenda in brutes when the venereal rage is upon them, which, as we said before, do not at any other time appear; some have therefore imagined the menstrual flux to be chiefly owing to a venereal stimulus^u; for, according to them, something of the same nature happens here, as we see in the erection of the male penis, when it swells and becomes turgid, by the blood

VOL. XIII.

U

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^r Id vero (conceptus) potissimum fit, quum menstrea novissime cesarunt, quo maxime tempore uteri semen concipiunt. *De Semine, lib. i. cap. 3. in fine. Charter. Tom. III. p. 186.*

^s Vasorum uteri, quæ interiorē ipsius partem adeunt, quibus etiam menses purgantur, oscula, quum scēmina conceptura est, aperiuntur: hoc autem tempus est, vel incipientibus, vel cessantibus, menstribus. Aperiuntur etiam alio toto purgationis tempore vasa hæc, non tamen tunc intra se concipit mulier; non enim semen in utero manere potest, quod ab influentis sanguinis copia abluatur. At cessantibus, vel incipientibus, menstribus, vasorum ora aperta sunt, et menstruum, neque multum neque assatim, sed paucum et paulatim, effluit. *De Uteri Dissectione, cap. 10. Charter. Tom. IV. p. 281.*

^t Israel Spach. *Gynæc. p. 2.*

^u Emmett. *Theor. Nouvelle du Flux Menstruel, p. 77, &c.*

being extravasated in the corpora cavernosa; yet in such a way, that in the uterus the blood poured into its substance stagnates longer, not being so quickly taken up again by the veins as in the penis, when it becomes flaccid; and at length the muscular fibres of the uterus are, by the quantity, irritated, and, contracting, expel the collected blood, by the orifices of the sinuses, into the cavity of the uterus. That easiness of distension, observed in the vessels and sinuses of the uterus in women big with child, was imagined greatly to favour this opinion, and what De Graaf mentions ^w, “ that in the vessels of the uterus there “ are often found polypuses so large, indeed, as to “ fill them up entirely; and sometimes they even de- “ generate into a substance perfectly callous.” That the uterus can contract itself by its own proper effort, we even learn from what happens in childbed, (of which in its proper place); and that in the space of two or three weeks after delivery, notwithstanding it had been so much distended in the last months of gestation, it returns to its former size. Hippocrates has said, *That with most women, at the time when the menses are about to appear, the os uteri contracts itself closer than at others* ^x. By this then it would appear, that about the time of menstruation the uterus had a stronger power of contraction, and of consequence was enabled to expel whatever should be accumulated. To which may be subjoined, what is often observed by physicians, that virgins, who menstruate with difficulty, generally find great relief from matrimony.

From these, however, it does not clearly appear that the cause of the menstrual flux depends upon an inclination to venery. A virgin come to maturity has equally the same appetite for venery when her menses are gone off, as when they were flowing. Do we not see, also, women past child-bearing, in good health and very lascivious, notwithstanding their menses have left them for some time? I have known many, who,

though

^w De Mulier. Organ. p. 113.

^x Mulieribus plerisque, quum menses apparituri sunt, uteri os sese magis, quam alias, contrahit. *De Superfœtatione, cap. 7. Charlier. Tom. VII. p. 864.*

though menstruating very regularly, yet rather averse to venery, have, with a kind of displeasure, avoided the embraces of their husbands. In the same way as the male penis, when swelled and turgid, grows flaccid and shrinks up after coition; so the clitoris, nymphæ, and vagina, when turgid and swelled, collapse in the same manner after the venereal conflict. From the observations of Ruysch and others, it appears that the Fallopian tubes grow turgid, and are drawn up in the act of venery, and afterwards return to their former state of flaccidity. Whence, if the uterus like them grows turgid, and inflamed with venereal desire, what reason can be assigned why it does not as suddenly collapse, and by as quick a resorption of blood into the veins, as is observed to happen in the other organs of both sexes.

But as we are to discourse, in a following paragraph, concerning those disorders which happen in consequence of a diminution or entire suppression of the menstrual flux, it will not be amiss to consider, whether the quantity of blood can be determined, which issues from the body of a healthy female at each menstruation. For Hippocrates has made the following observation: That *where the menstrua flow in too great abundance, there other diseases frequently arise; but where they do not come away, there the uterus itself is liable to be disordered*^y. Galen, in his commentary on this aphorism, very well remarks, that Hippocrates presaged all the disorders of the body from an overflowing of the menses; because the body, from a too great loss of blood, was thrown into cachexy: but when the menstrua did not come away, then the uterus was liable to disorders, either from the vessels being too rigid, or from the blood being in too great a degree accumulated within the substance of the uterus, or from both concurring at the same time together: and from thence he shews how inflammatory, scirrhus, erysipelatous, and carcinomatous disorders

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may

^y Menstruis copiosioribus profluentibus morbi oboriuntur: at non prædeuntibus accidunt ab utero morbi. *Aphorism. 57. sect. v. Charteris. Tom. IX. p. 229.*

may be apprehended^z; which disorders we see happen so frequently at that time of life when the menstrua generally cease, and chiefly to those who, having been accustomed formerly to have a free and liberal discharge of that sort, find it stop afterwards all of a sudden.

Nothing certain, therefore, can be here determined, unless we could have an exact knowledge of the quantity of blood which a healthy woman evacuates at each menstrual period.

Mean while, from what has been said above, it is now pretty obvious, that a great diversity in this particular must obtain, according to the difference of climate, habit of body, and various ways of living. The women in Lapland menstruate very sparingly; in hot countries, the menses come away in great abundance: in a lax habit of body, these discharges are always more copious; while in women of firm, robust frames, the quantity is very little. Those who live at their ease, and fare sumptuously, menstruate in large quantities; while the country peasant, hardened by daily labour and fatigue, evacuates only a few drops, and yet enjoys very good health. The women in Holland, addicted all their lives to drinking great quantities of watery sops, and warming the inferior parts of their bodies in the winter-time with stoves, are quite exhausted and languid through the excess of these monthly discharges; and all of them contract, from thence, a very bad habit of body. It is no wonder, therefore, that we meet with so very different accounts in authors, with respect to the proper quantity of the menstrual discharge. Besides, the quantity of blood that comes away from any woman is difficult to be determined, as the clothes and linen are no sooner wet with menstrual blood, than it is quickly dried up again by the heat of the body.

Hippocrates determines the quantity, as follows :
But in every woman, if she is in health, the menses come away in due quantity, when they flow at the rate of two Attic hemina in two or three days, a little more or less :
but

but if the time is much longer or shorter, it causes either disease or barrenness^a. Now most authors take the Attic cotyla to be equal to the Roman hemina: but the cotylæ were also called pounds, which contained twelve ounces of measure, which were equal to ten ounces in weight, that is, the same weight with the Roman hemina^b. There have been disputes among authors, indeed, about these measures; but this last opinion seems to be very probable: and though there may be some difference between the Attic cotyla and Roman hemina, yet it does not seem to be very material as to settling the quantity of the menstrual flux, which, ending this dispute which ever way you please, cannot even then be very exactly determined. We see, however, that most physicians have taken the quantity evacuated in this way to be about twenty or four and twenty ounces, whether they reckoned by weight or by measure. Thus Friend^c reckoned the common quantity of menstrual discharge to be about twenty ounces; and then afterwards computed how much blood ought every day to be accumulated, in order to form this menstrual plethora.

But this quantity of the menstrual flux has by no means been received by every medical author; nay, some have differed widely from it. Astruc^d, after having remarked the great variety, in this respect, to be met with in different women, and not only so, but that, in the same woman, the quantity varies at different times, is of opinion, however, that, at a medium, the limits of this variation might be settled from eight ounces to sixteen; though there are also instances of women in very good health, who yet menstruate every month, some a greater, and some a lesser quantity than even this. Haller^e reckoned six or eight ounces the

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ordinary

^a At omni mulieri, si sana sit, prodeuntes menses moderati sunt, qui ad duarum Atticarum heminarum mensuram, aut paulo plus vel minus, ilque ad biduum vel triduum, manant: longius autem tempus, aut brevius, morbosum, aut sterile est. *De Mulier. Morb. lib. i. cap. 9. Charter. Tom. VII. p. 734.*

^b Jo. Casp. Eifenschmid de Ponder. et Mensuris, &c. p. 74, et seq.

^c Emmenolog. p. 38, et p. 6.

^d Traite de Malad. des Femmes,

Tom. I. p. 22.

^e Prim. Lin. Physiol. sect. 817. p. 539.

ordinary quantity of the menstrual discharge; and according to Brudnell Exton^f, it rarely exceeds four ounces. Du Haen took another method to determine the quantity of the menstrual discharge^g: he poured some fresh-drawn blood, while warm, the quantity of which he knew precisely, upon a piece of linen, then marked exactly how much of the linen it had stained. By repeating this frequently, he arrived to that degree of exactness, that for any wager he could tell precisely the quantity of blood received upon any piece of linen, and thus could justly determine how much blood came away from the uterus during the time of menstruation. Now he “found, that some women, during
“ their menstruation, evacuated three ounces; others
“ four or five; not so many who voided half a pound;
“ and very few ten ounces, unless where the uterus
“ was diseased.”

From these experiments it appears, that the quantity of menstrual blood is much less than that computed by Hippocrates. Nay, this seems to be confirmed even by Hippocrates himself, where he says, *But in a healthy woman, the lochia flow in sufficient abundance, if at first they run at the rate of an Attic hemina and a half, or a little more; and so proportionally less afterwards till they cease entirely*^h. Now no one, who has ever seen the lochia flow in child-bed, after the separation of the placenta, can by any means suppose the quantity of blood to be equalled by that of the menstrual flux. It is true indeed, that the Grecian women, living reclusely, and in a warm climate, might on that account menstruate more copiously. But since almost all physicians have judged entirely from the quantity of linen stained, and frequently trusted to the accounts only of the women themselves, an error of this sort might therefore very readily creep in here, and more especially as the womens nurses often shamefully exaggerate in cases of this nature. The same ingenious

^f P. 108. ^g Rat. Medendi, parte iv. cap. 6. p. 204.

^h Prodeunt autem lochia sanæ mulieri satis abunde, primum Atticæ heminæ et dimidiæ mensura; aut paulo copiosiora; deinde ad hujus rationem pauciora, donec desinant. *De Mulier. Morb. lib. i. cap. 71. Charter. Tom. VII. p. 775.*

ingenious author has seenⁱ “several cases of miscarriage, where the midwives swore solemnly, that more than eight or ten pounds of blood had come away, when, upon examining the whole heap of bloody clothes, there yet was no reason to think that above a pound and a half had been evacuated.”

From all that has been just now said, it seems reasonable to conclude, that the menstrual flux, in females of the human species, renders the uterus fit to conceive, to retain the conception, and to nourish what it thus retains: for when the vessels and sinuses of the uterus are every month opened in such a way, as to admit, and transmit the red, which is the thickest part of the blood, they are by these means rendered fitter to promote a more extensive application of the whole surface of the human ovum to the cavity of the uterus, and by sending forth the vascular shoots, connect it more firmly, and, as it were, radically implant it there. But still it is not easy to account for the stated return of the monthly period, either by a universal plethora of the whole body; or yet by a plethora of the uterus alone. Till we receive, therefore, farther knowledge concerning this affair, which is reserved perhaps for some future age, we must, as Celsus^k says, “dismissing every thing dubious from the art itself, yet not from the thoughts of the artist,” be contented for the present to make use of what certainty there is. In the human species, a female continues fit for generation thirty years and more; and the menstrua give the first signs of fertility, as their entire cessation shews when this last is at an end. But seeing, in the human race, their generation is not limited to any particular season, the uterus, therefore, every month, is by the menstrual flux disposed in such a way, as to be always in readiness for conception. In brutes, tho’ nothing like pure blood comes away, yet, about their usual season of generating, there are certain humours which begin to flow from the uterus, so as to moisten all the parts about the pudenda. We also read of

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ⁱ De Haen Rat. Medendi, parte iv. cap. 6. p. 205.
Medicina, lib. i. in prefat. p. 20.

^k Cels. de

a certain species of monkeys of a greater likeness to the human race, in which the females are observed to menstruate^l: which Kolbe^m attests, as having been an eye-witness of it; and remarks at the same time, that these animals have a pair of breasts like women in the fore-part of their chest.

From what has been said, the menstrual flux does not seem originally designed to remove or lessen the plethora; since, in persons who have no plethora, the menses still happen at the ordinary time. But when the uterine vessels, being once open and dilated, allow the red blood to pass at their extremities, should a fulness prevail through the whole body, through an accumulation of blood, there will of course a greater quantity of it go out by these open passages, and so the plethora may be in this way relieved. Whence also, we may understand, why women, who live at ease and fare luxuriously, menstruate in greater abundance than those who are obliged, by hard labour, to earn a scanty subsistence to themselves and families. At the same time we may also observe, that a very small quantity of the menstrual flux, provided it is sound and good, suffices to keep a woman fruitful: for while the internal surface of the uterus remains in such a disposition as readily to allow the human ovum, containing the young embryo, to be properly joined, and radically implanted in its substance, a woman will always continue fruitful. To this aptitude or disposition, the menstrual flux, though in small quantity, appears greatly to contribute: and, in some very rare instances, several women have proved fruitful, even though they never had the menstrual discharge at all; instances of which are to be read in Schenkiusⁿ and others. In the mean time, however, from what has been already mentioned, it appears that most of those women who never had their menses, were always barren. As to those particularly rare instances, it is most likely that their vessels were disposed in such a manner, as to be pervious indeed, and commodious for the reception of
the

^l Gassend. in vita Peiresc. lib. v. p. 169.
Caep de Goede Hoop. p. 166.

^m Beschryving van de
Lib. iv. de Conceptione, obs. 1. p. 556.

the human ovum, but yet not so far dilated as to allow red blood to pass: for it is often observed of women who are deprived of their menses, that, in place of blood, a small quantity of thinner liquid comes away at fixed stated periods. It is the same case perhaps with the uterus, in women who give suck; many of whom I have known conceive, though they have had no returns of the menses since the time of their delivery. Daily experience shews what a remarkable correspondence there is between the breasts and the uterus. Thus in a virgin come to maturity, the breasts begin to swell, whenever the uterus is once disposed to menstruation. In child-bed, as the lochia on the third day are lessened, nay, frequently entirely cease, the breasts quickly fill; and if the woman suckles her child, the lochia return again, whilst the milk passes freely out by the nipples: but if she gives the child away to be nursed by another, the breasts subside, and what passes by the uterus is first whitish, and then afterwards of a bloody cast; so that, *ceteris paribus*, the lochia flow a longer time, and in greater abundance, with those who do not suckle their children. I have sometimes observed, that in nurses, in place of their menstrua, a small quantity of thin whitish liquor has come away from the uterus; and upon a farther dilatation of the vessels, some blood has followed in several, though not in others. At this time, also, it is probable, had they been put to their husbands, they would have been in all respects well enough disposed for conception: for according to Galen, as we mentioned before, conception chiefly takes place when the menstrua are recently stopped; for then those vessels upon the internal surface of the uterus are just so much contracted as to exclude the red globules, yet open enough to let a thinner fluid pass: the same is the case, he says, in the beginning of menstruation. Whence, in nurses who conceive without any return of their menses, it would seem that the uterus, with respect to its vessels, is in the same condition as when the menses are about to flow, or beginning to give over; that is, the vessels not altogether contracted, but only so far

as, in place of blood, to let only the thinner humours pass. Might not a like disposition have obtained in those extraordinary instances of women who conceived without having ever had the menstrual flux?

The signs, when the menses are about to flow, are pretty well described by Moschio^c. The breasts swell; a weight and an itching are felt about the pubis; they grow lazy, feel a heaviness, and sometimes a pain in the back about the kidneys; they yawn, and stretch every part of their body; a flushing in their cheeks comes and goes; and sometimes they have a loathing, with a desire to reach. These are the most common symptoms which usually precede or accompany, at first, the menstrual flux: in many, the muscles and tendons of the neck, becoming tense and rigid, are often very troublesome: and others complain of a head-ach.

The continuance of this menstrual flux is longer or shorter in different women; yet so as, in most, to be over in three or four days^p. It is also reckoned better where it drains away by degrees, and flows on without interruption, until it ceases entirely. Sometimes, however, it happens, that the menstrua shall flow two or three days, then stop, and presently afterwards return again; as I have more than once had occasion to see in women both healthy and fruitful; and the same has been also observed by Astruc^q. Such women, however, experience this inconvenience, that all the other symptoms return, which usually precede the eruption of the menstrua; particularly a head-ach, and a troublesome stiffness in the neck, till the blood begins again to flow from the uterus.

Of what quality this blood is, which comes away by the menstrual flux, we may determine pretty justly, according to the authority of Hippocrates, when he says, *The blood, which comes off in this way, is like unto that which comes from a victim, and coagulates very soon*^r.

Now

^c Spach. Gynæc. p. 2. n^o 21. et p. 20. Herman. Gynæc. p. 18. Spach. Gynæc. n^o 18.

^q Traite des Malad. des Femmes, Tom. I. p. 23.

^r Prodit autem sanguis, qualis e victima, citoque concretit, si mulier sana est. *De Mulier. Morb. lib. i. cap. 9. Charter. Tom. VII. p. 735.*

Now we all know, that, in their sacrifices, they made choice of the healthiest animals; and it is peculiar to the blood of a healthy creature, especially when it springs from an artery, quickly to coagulate.

This opinion is confirmed also by most of the best authors, who have wrote concerning the health and diseases of women^s. But when once the humours, through disease, become depraved, then it is no surprise to see the menstrual blood of a morbid quality; as also is the case, when the uterus or vagina are affected with any thing ulcerous. In the same way, when, by the orifice of the uterus being some time contracted, the menstrual blood has been too long retained within its cavity, or lodges in a half-coagulated state about the inner plaits of the vagina, it begins soon to putrefy by the warmth of the parts and free admission of the external air; then afterwards changing from the nature of sound blood, it flows out in a sort of putrid nasty liquamen. The like may also happen, when women, not paying a due regard to cleanliness, neglect to change their clothes and bed-linen, especially in the hotter climates. But that the blood, as it comes away from the uterine arteries, is pure and wholesome, and that it may afterwards be liable to be corrupted, is certainly very obvious.

Hence, too, we may easily see what judgment we ought to pass concerning all those noxious qualities ascribed to the menstrual blood, and to menstruating women; as also concerning philters, and other superstitious remedies, prepared from thence. Columella^c has asserted in his writings, that it is the very last, and, when all others have failed, the most efficacious remedy to destroy the caterpillar, so pernicious to gardens, if a woman in her menses, with her bosom uncovered, her hair dishevelled, and bare-footed, shall walk three times round all the garden-hedge and every bed: for then,

—*Mirabile*

^s Mauriceau des Malad. des Femm. grosses, Tom. I. p. 54. De Graaf de Mulier. organ. p. 134. &c. Astruc traite des Malad. des Femm. Tom. I. p. 23. ^c Rei Rustic. Autor. Tom. I. p. 732. lib. x. v. 357.

— *Mirabile visu,*

*Non aliter quam decussa pluit arbore nimbus,
Aut teretis mali, vel testæ cortice glandis,
Volvitur ad terram distorto corpore campe.*

— *Strange to see,*

As pippins, or as acorns from the tree,
When struck with hail, or sudden show'rs of rain,
From off the boughs are strew'd along the plain;
So strew'd along the ground, the vermin lie,
Rolling with pain, and in distortion die.

Many other instances of the like nature are scattered here and there in different authors; a collection of which, if the reader shall think it worth his while, may be perused in Ludovicus Bonaciolus^u. Such superstitious fables, however, which can only gain credit among silly old women, had better be delivered over to perpetual oblivion.

§. 1285. **I**F this redundant blood be retained within the body, supposing it to be in the condition (§. 1284.) there will arise a plethora; a sluggishness; a heaviness; a paleness; a pain in the loins and groin; and a depravation of almost all the natural, vital, and animal functions: all which effects are easily deduced from the pressure of the vessels, produced by a stagnation of the redundant blood.

Notwithstanding it has been said under the preceding aphorism, that the menstrual flux is by no means produced by an universal plethora as a primary cause; yet, as a certain quantity of blood in a healthy woman must, by a law of nature, pass out in this manner, it is self-evident that a retention of the menstrea must increase the quantity within the vessels, and this sooner or later in proportion to the usual abundance and scarcity of the menses. But we have also seen, that notwithstanding it is sometimes called the menstrual *pur-gation*, yet what passes in this way from the uterine cavity

^u Ennead. Mulieb. cap. 3. Spach. Gynæc. p. 115.

vessels is nothing but found pure blood, and noways of any noxious quality whatever. When, therefore, a quantity of found blood is accumulated, by the retention of the menstrua, in a greater proportion than what the common and unavoidable changes of life can admit without inducing disease, then a plethora is said to exist, as we have already explained at greater length, at §. 106, α.

Sluggishness, heaviness.] For these are the effects of a plethora, as we have remarked at §. 106, ε. Galen^w, recounting the signs of a suppression of the menses, reckons, “ a sense of weight over the whole “ body.” And Hippocrates says, *In a woman, whose flesh is soft and tender, if the body is full of blood, and it do not go off in some way or other, the flesh, being stuffed up and heated, will therefore occasion pain^x*: for plethoric people, in all the muscles of the body, perceive a soft swelling, with plenitude and distension, and a kind of immobility, so as they can hardly clinch their fingers, as we before mentioned in the Diagnosis of a Plethora.

Paleness.] Amongst the signs of a plethora, was reckoned a redness in the face, eyes, and lips; nay, sometimes, in very plethoric persons, the skin, even over all the body, grows intensely red: and therefore it may seem strange that paleness should follow upon a suppression of the menses. But as to this, it is to be remarked, that many times the menses are suppressed in virgins quite pallid, in whose bodies there is hardly any red blood at all, as appears upon opening a vein in order to empty the vessels: for then a small bit of red slough only, is to be seen swimming in a very large proportion of serum. Physicians, however, of prudence and sagacity, in the cure of obstructed menstrua, are careful to distinguish properly, whether the disorder arises from the menses being really suppressed, or whether the want of that discharge is owing to any other present or preceding disorder: for in

VOL. XIII.

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^w De Locis Affectis, lib. vi. cap. 5. Charter. Tom. VII. p. 524.

^x Molli carne præditæ mulieri, ubi sanguine corpus impletum fuerit, nisi ab ipso decesserit, carnibus impletis, et calefactis, dolor oritur. *De Mulier. Morb. lib. i. cap. 2. Ibid. 728.*

the former case, a plethora follows, and their colour looks red; but in the latter, they are altogether pale, and of a bad habit of body.

Hence there is great diversity obtains with regard to the method of cure: for a plethora indicates the opening of a vein; a bad habit of body, frequently of some considerable standing, requires other remedies.

But there is likewise another reason why paleness may attend a suppression of the menses, even where a plethora really exists. It is very well known, that good sound blood, when drawn from a vein, and left to stand in a clean vessel, separates into two parts, to wit, into a thin liquid serum, and a thick coagulated red part. If all this serum is poured off, in a few hours after, a fresh quantity of serum will be seen, the red part gradually dissolving, the greatest part of which may be thus converted into a yellow or greenish-yellow coloured serum. Now the vessels, when too much distended by a plethora, lose part of their force, by which they used to act upon their contained liquids: hence the humours being not so well worked up to a proper density, the red part of the blood may even in its own vessels be dissolved into a serum; whence the redness of the body will gradually decrease, and change into a paleness. To this we may add, that if there is a plethora, it will naturally seek out a passage for itself by the dilated vessels; which not being as yet able to obtain, the vessels and sinuses of the uterus will, however, be more and more dilated; whence the pain of the uterus and parts adjoining will necessarily be occasioned, as we shall presently see. But the same thing happens, in this case, with that which Hippocrates apprehended so much in women with child, as we have mentioned on another occasion, at §. 69.

“ When a woman is with child, she becomes pale
 “ and green (*χλωρη*), because her good blood passes from
 “ her every day gradually, and is spent on the growth
 “ of the foetus: having less blood in her body there-
 “ fore, she must of necessity look pale and greenish.”

Pain in the loins and groin.] As the sinuses of the
 uterus,

uterus, being very numerous, and dispersed through its whole substance, grow turgid with the accumulated blood, the vessels which run in between them must necessarily be compressed; whence the vessels in the neighbourhood will be more filled, and from this fullness be more distended: hence that sense of weight at first, and a disagreeable pain afterwards, which so often precede the menstrual flux. All these bad symptoms increase, if the blood at this time does not find an outlet by the uterus². There is a pretty curious observation, which confirms the truth of what has just now been said. A woman about fifty years of age, who died a violent death, had lived nineteen years in the married state without ever conceiving. Her menstrua came away but only in small quantity; and about that time she was always miserably swelled up, and had most excruciating pains in her belly: for some years after the first eruption of the menses, she was accustomed to have bleedings at the nose, and frequent spitting of blood. Upon examining her body, it was found that the membrane, which covers all the internal surface of the vagina, had shut up the orifice of the uterus, adhering as firmly to it as to the vagina itself. This membrane was perforated by two small openings, only about the fourth part of a geometrical line in diameter: but as to the neck of the uterus, it was twice as long as what is usually observed, and much thinner, being stretched out by the distension of the collected blood; which distension, however, it is very evident, must have been attended with extraordinary pain and uneasiness³. Whence Hippocrates has said, *Whenever the menses lie concealed, a pain fixes in the lower belly, and a heavy weight seems to lie upon it, and pain is felt in the loins and all about the ilia*^b. He makes the like observation in another place. But there he says, that the loins and ilia are most cruelly pained: then adds, *If the menses, however, do not flow at all,*

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² Simpson's System of the Womb, p. 40. a Academ. des Sciences, Pan. 1704. Hist. p. 33.

^b Quum menses latuerint, dolor detinet inum ventrem, illique pondus incumbere videtur, lumbi et ilia dolent. *De Natur. Muliebr. cap. 18. Charter. Tom. VII. p. 689.*

the humours, in proportion to the disorder, become thick, clammy, and glutinous^c; and therefore very apt to stagnate and be corrupted in the vessels and sinuses of the uterus; all which are still rendered worse, the longer they continue. Whence, at the distance of two or three periods, sometimes the menstrea break forth all of a heap from the pudenda; and what comes away seems to be like clots of corruption, and quite black^d. But that this arises from the blood being accumulated either in the cavity or vessels of the uterus, is plain from thence, that such a woman looks as if she was with child, feels pain and uneasiness in the conjugal embraces, imagines herself oppressed with somewhat, and that something of a solid heavy lump is lodged as it were within her belly^e. But should the menstrea be longer suppressed, then he remarks, a suppuration is to be apprehended. This, however, chiefly happens from the heat of a burning fever. Now there are certain particular signs when they become purulent; for the pains all fall upon the lower belly with violent pulsations, nor can they bear in the least to be touched. But should she happen to recover a little better health, the menses break forth by the pudenda, where blood and corruption pass out together^f. Then he adds, that an ulcer in the uterus is greatly to be apprehended; and should the swelling continue very long, the woman, even though the ulcer may be cured at last, will always remain barren. But if this purulent and corrupted matter does not get a proper outlet from the uterus, then the pus gathers all about the soft villous part of its sides^g.

These

^c Si vero menses omnino non fluant, pro morbo crassi, lenti, et glutinosi, redduntur. *De Mulier. Morb. lib. i. cap. 6. ibid. p. 732*

^d Postquam duo aut tres menses prodierunt, interdum ei per pudendum menstrea confertim erumpant, et, quæ prodeunt, ut carunculæ esse videntur, velut ex corruptione, et nigra sunt. *Ibid. lib. i. cap. 6. ibid. p. 732.*

^e Prægnans esse videatur, et in viri congressu doleat, ut putet quid incumbere, et pondus aliquid in ventre inesse. *Ibidem.*

^f Id vero maxime accidit, si a febre exusti fuerint. Signa vero sunt, si purulenta fuerint: dolores enim ad imum ventrem irruunt, et pulsationes vehementes; neque contactum sustinet. Quod si melius habitura sit, menses ei per pudenda erumpunt, pusque et sanguis fertur. *Ibidem, cap. 4. p. 731.*

^g *De Mulier. Morb. lib. i. cap. 5. p. 732.*

These are the principal disorders which happen to the uterus, when the menses are suppressed. But as the hypogastric arteries give branches, not only to the uterus, but likewise to the neighbouring parts, therefore, when a free passage is denied by the uterine vessels, those of the neighbouring parts will of course sustain a greater pressure, and be more distended; consequently other new symptoms will arise. All these are accurately described by Hippocrates, who thus concerning a suppression of the menses says: *But when the blood, now set in motion and secreted, does not go out of the body, but remains within the uterus, in which if there should be no opening or outlet, then indeed the uterus, being heated, by this quantity of blood remaining some time within its cavity, will impart this heat to the rest of the body. Sometimes it may even throw its blood into the other veins of the body, so as, from this fulness of the veins, to occasion pain and œdematous swellings: and there is great danger sometimes of lameness from this very cause. This is not all; for now and then it bears hard upon the bladder, and by pressing and shutting up its orifice brings on a strangury. Sometimes, also, the uterus, thus filled with blood, falls over upon the haunches; or towards the loins, creating great uneasiness: and at other times, the blood, when it has remained five or six months in the uterus, putrefies, and is changed into corrupted matter, which, in some women, is evacuated by the pudenda; in others there is something like a tubercle arises in the groin, where corruption forms, and from whence it is also evacuated^h. The like effects are also in another place recounted by Galenⁱ.*

X 3

Wherefore

^h Quum autem agitated et secretus sanguis non exeat foras, sed in uteros, uterique non hiant, tum sane, diutius immorante sanguine, uteri incalentes calorem reliquo corpori præbent. Quandoque etiam sanguinem in venas corporis transfundunt, ut et venæ impletæ doleant, et œdemata excitent. Nonnunquam vero ex eo claudicationis periculum impendet. Quinetiam interdum vesicam obsident, premuntque, et claudunt, stranguriamque adferunt. Quandoque vero uteri, sanguine pleni existentes, aut ad coxendicem, aut ad lumbos, procidunt, doloresque exhibent. Aliquando vero, ubi sanguis quinque aut sex menses in utero immoratus est, putrescens, pus fit; et quibuscumque pus per pudendum exit; nonnullus etiam in inguine velut tuberculum oritur, ibique pus factum foras prodiit. *De Natura Pueri, cap. 4. Charter. Tom. V. p. 313.*

ⁱ Comm. tert. in lib. Hippoc. de alimento. Charter. Tom. VI. p. 270.

Wherefore not only the uterus, we see, and parts adjoining to the uterus, are in a grievous manner affected by a suppression of the menses, which may easily be deduced from the vessels being too much pressed and choked up by the great quantity of stagnating liquid; but also the whole body is disordered, in such a manner as from this very cause alone we may observe that there will arise

A depravation of almost all the natural, vital, and animal functions.] On another occasion (§. 1224.) we took notice, that from the observations of Tabarranus, a most ingenious anatomist, there appeared to be a very free communication between the veins and cavity of the uterus: for upon blowing into the veins, he observed the cavity of the uterus and vagina to be filled with air; and again, blowing air into the orifice of the vagina, he saw the veins belonging to the uterus, vagina, and ovaria, all swell up. When, therefore, the uterus is in a sound condition, there must be a very quick and easy resorption by the uterine veins.

It would seem therefore, that Hippocrates, from this easy resorption, had taken his proofs of fertility, when he says, *If a woman has not conceived, and you have a mind to know whether or not she will conceive, apply some perfume, wrapped up in her clothes, to the parts below; and should you perceive the smell pervading the upper parts, and to proceed from her mouth or nostrils, then be assured she is not barren on her own account*^k. Hence it is very evident, that should the purulent corrupted humours, by stagnation, settle here, they may, from being resorbed, bring on the worst of cacochymias, and so disorder every function: the same thing must also happen, from a translocation of matter that has been so resorbed, to all the various parts of the body. This Hippocrates seems to point out, when he is treating of what happens, “when a woman’s menses appear indeed, but “come away in a smaller quantity than is proper^l,”
for

^k Mulier si utero non concipiat, scire autem velis an conceptura sit; vestibus obvolutam subter iussito: atqui si odor quidem ad nares et os usque per corpus tibi pervadere videatur, ipsam nosce per se infœcundam non esse. *Aphor.* 59. *sect.* v. *Charter.* Tom. IX. p. 231.

^l De Mulier. Morb. lib. i. cap. 7. *Charter.* Tom. VII. p. 733.

for then he makes the following remark: *The body is pained in different ways, chiefly about the loins, backbone, groins, and joints of the hands and feet. Nor are all these parts pained at the same time, but by turns; and wherever the secreted blood, which cannot be contained in the uterus, forces its way, or on whatever part it happens to fall, there a swelling will take place*.*

But there is also another reason why the natural, vital, and animal functions of the body may be disturbed from a diseased uterus. On another occasion, at §. 701, when treating of the delirium in fevers, it was demonstrated, that the common sensory might be so affected by other injured parts of the body, as if the physical cause pre-existed in the brain itself, when yet the origin of the disorder might lie in parts very remote. This is what Helmont calls “the action of” the regimen, or governing principle, by which every “part of the body is consenting to another.” At the same time it was shewn, that Hippocrates had given manifest hints concerning this action: and from many practical observations we also demonstrated, that certain parts of the body, when disordered, had really a most powerful effect upon other parts at the greatest distance; and, it is evident, not by any communication or propagation of morbid matter by means of vapours proceeding from the parts first affected, as the schools used to explain it, but only by the wonderful power of some certain parts of the body over others. In the same place we remarked, that it was sufficient to physicians to be certain that such things really happen in the human body, and that they need not therefore be ashamed to acknowledge an ignorance of the manner by which these are brought about. It is, without doubt, of the greatest service to the art, to be well informed what parts of the body act in this manner upon others, and what parts are again influenced by them; which, as we have said before, is also acknowledged by Hippocrates: *For the body is of a piece*
with

* Dolet alias atque alias corpus, maximeque lumbos, et spinam, et inguina, manuumque et pedum articulos. Neque hæc simul dolent, sed vicissim; quocunque secretus sanguis, qui uteris inesse nequit, impetum fecerit, et quacunque parte decubuerit, tumor existit. *Ibidem.*

with itself, and consists of similar parts. Though there is some difference between these parts with regard to size, as being greater or lesser; or to situation, as being superior or inferior; yet if any one, by intercepting the least part of the body, vex and disorder it, the whole body shall soon feel the effects of this injury, of whatever kind it is, because the smallest part of the body has all the requisites of life and sensation in common and alike with the greatest. And this smallest part, in whatever way it is affected, will have a reference, (*προς τὴν ὁμοειδίαν*), on account of its sympathy, to its original affinity and connection, every part to its own respectively, whether good or bad; and thus the body will feel pleasure or pain, because the least partakes of all, and each of these again transmits their feelings to parts peculiarly allied to itself; and thus all are made to participate alike^m.

Now, if we consider, what a surprising alteration there is in the body about the time of puberty, when the uterus begins to be changed; that many diseases lessen, nay, sometimes, even entirely go off, on the first periods of menstruation; and the whole brain is sometimes disordered in a wonderful manner, as in the *furor uterinus*, when a virgin of the most virtuous education, laying aside all shame, shall, as if out of her senses, rush on to mens embraces, till she retire rather fatigued than fatiated with venereal enjoyment: all these, I say, and many more which might be added, serve to shew the surprising power a diseased uterus has to change and disorder every function of the body. Whence *Helmont*ⁿ, after observing that an asthma and

^m Corpus autem ipsum sibi ipsi idem est, et ex iisdem constat. Et si non eodem modo se habent ejus partes magnæ et parvæ, itemque superiores et inferiores: si quis tamen interceptam corporis partem minimam male afficere velit, eam affectionem, qualiscunque tandem fuerit, totum corpus sentiet; propter quod minima corporis pars eadem habet omnia, quæcunque et maxima. Eaque minima pars, quicquid tandem pertulerit, ad cognationem et gentilitatem refert, (*προς τὴν ὁμοειδίαν*) unaquæque ad suam, sive bonum sive malum, id fuerit; ac propterea corpus ob minimæ partis cognationem tum dolet, tum oblectatur, quod in minima parte omnes insint, æque ad ea, quæ sui sunt generis, singula transferunt; et omnia denunciant. *De Locis in Homine, cap. 1. Charter: Tom. VII p. 358.*

ⁿ In Capitulo, *Asthma et Tussis*, n^o 13, 14. p. 289. et in Capitulo de *Conceptis*, p. 484. n^o 18.

and cough are sometimes produced from the uterus, “ by the action of the governing principle, in so “ powerful and almost instantaneous a manner, on “ the least motion of anger, grief, or fear, &c.” then adds, “ For it is not so much by way of vapours, but “ by the mere force of this consenting or governing “ principle, that the uterus rules the whole woman ; “ seeing it is, as it were, a stranger guest only depend- “ ing on the body for its nourishment, as the bark “ upon the tree to which it is connected. Moreover, “ the uterus has a peculiar mode of subsisting proper “ to itself, wherein nothing is so hostile and disagree- “ able to it as the passions of the mind : whereof it “ is not so much under the direction of the mere vi- “ tal principle, but, besides the influence it has upon “ the body, domineers with a kind of furious rage “ upon minds of very quick sensibility, &c.”

That all these bad symptoms may happen to the uterus, from a suppression of the menses, is confirmed from the observations of Hippocrates : for he says, *It is of great advantage not to have the menses suppressed : for when they are so, they may, as I apprehend, be the occasion of sudden disorders, such as the epilepsy, falling sickness, &c. with some they occasion constant looseness, with others they bring on the piles*°. And even in another place, speaking of female disorders, he says, *All their disorders spring from the uterus*^p. And a little after, he subjoins, that when the menstrua are suppressed, *The uterus, from its fulness, bears upon the haunches, and causes pain all about these parts, and about the groins, like a large ball working up and down the belly : it affects the head too with a pain, sometimes in one side, and at other times all over the whole**. Much the same symptoms, from a suppression of the menstrua, are to be

° Menses non supprimi, utile : ex talibus comitiales morbi fiunt, ut arbitror : quibusdam ventris subductiones diurnæ ; quibusdam autem hæmorrhoides. *Cœac. Prænot. n° 522. Charter. Tom. VIII. p. 252.*

^p Morborum omnium uteri causæ sunt. *De Natura Pueri, cap. 18. Charter. Tom. VII. p. 376.*

* Pleni uteri coxendices contingunt, et ad coxendices et inguina dolorem afferunt, ac tanquam pilæ in ventre discurrunt, caputque dolore afficiunt, modo quidem altera parte, modo vero totum. *Ibidem.*

be seen in Galen: *The signs are, a sensation of heaviness in the body, loathing, a total loss of appetite, an unequal horror at times, a longing for things improper, &c. a fondness of eating earth, cinders, and the like, &c. besides, there is a pain in the loins, neck, forehead, the bottom of the eyes, also burning feverishness, with blackish-coloured urine, &c. some have an entire suppression of urine, or pass it with great difficulty, ^a &c.*" Whence Celsus also concludes, *That women, whose menses do not come rightly away, must either have very cruel head-achs, or some other part very much disordered^r*; thus marking out the most usual symptom which attends an obstruction of the menstrea, namely, the head-ach, and acknowledging that extensive influence the uterus has over all the parts of the body. But the celebrated Astruc very well observes^s, that, in a hysterical girl, there is not any very grievous hurt or disorder in the uterus absolutely requisite to cause all this disturbance; for even the slightest change will do it, as either, for instance, from a quick repletion, or as sudden a depletion of the vessels, and other such causes of a milder nature; whilst, on the contrary, a cancerous ulcer wasting the uterus, excepting the pain, shall not disturb the other parts of the body so much, provided the greenish-coloured sanies, that proceeds from such an ulcer, shall have a free outlet, without being re-sorbed by the veins.

What surprising disorders do sometimes happen in consequence of a suppression of the menses, the following case will shew. A girl^t of seventeen years of age, who had begun to menstruate regularly at fifteen, having been thrown into a sudden fright during the flowing

^a *Signa sunt, gravitatis sensus in corpore, fastidium, dejecta cibi appetentia, horror inæqualis, alienorum quorundam cupiditas, &c. ac terram, aut extinctos carbones, aut quædam hujusmodi, edunt, &c. preterea et lumborum, et colli, et syncipitis, dolor, et oculorum baseos, item febres ardentes, et urinæ nigricantes, &c. quibusdam urina supprimitur omnino, aut difficulter redditur, &c. De Locis Affectis, lib. vi. cap. 5. Charlier. Tom. VII. p. 524.*

^r *Quibus fœminis menstrua non proveniunt, necesse est, capitis acerbissimi dolores sint, vel quælibet alia pars morbo infestetur. Lib. ii. cap. 7. p. 59.*

^s *Traite des Malad. des Femm. Tom. IV. p. 62. 66.*

^t *Medical*

Essays and Observat. Vol. V. part ii. p. 471, et seq.

flowing of her menses, with the unexpected death of one of the best of fathers, was taken with an extraordinary flooding, attended with fainting and tremors : she afterwards grew tolerably well again, and continued so to the next term, when her menses scarcely made their appearance ; and the period following, they stopped altogether : then the hysteric paroxysms came on more frequently, and with greater violence, and with manifest convulsions. She was afterwards blooded, and had a vomit given her, which in a few days was again repeated : but there immediately came on a difficulty of swallowing, and at length she could let nothing down whatever, which, whenever she but attempted to do, that moment she was seized with convulsions and tremor, with a reciprocal distension of her chest and lower belly, which at last ended in universal spasms and cramps. For a whole month she lived without taking either meat or drink : her physician attempted to make her swallow a spoonful of anti-hysteric julep, which went down about two inches in the œsophagus, where it was stopped by a spasmodic contraction, and immediately followed by the severe cramp. Having in vain administered several other remedies externally, he tried to force the passage with a bit of sponge, fixed to the end of a piece of whalebone ; which being performed twice, he got the better of the spasm, and the patient could then swallow equally, without uneasiness, any thing that was offered, whether solid or fluid. The freedom of deglutition continued about three weeks, though every thing she took came up again, excepting cherries, strawberries, and an anti-hysteric julep, all which remained upon her stomach : a greenish-coloured matter came up sometimes along with what she vomited. Her belly being astricted, laxative glysters were therefore injected, which was followed by a copious discharge of blood by the anus, insomuch that in a couple of days she evacuated about two pounds. This evacuation of blood was stopped, by means of an astringent vulnerary injection ; but in a short time after, the spasm of the œsophagus returned, and quickly increased to such

a degree, that all the power of swallowing was entirely taken away; whence, for fifty-four days, she tasted neither meat nor drink; during all which time she had frequently much severer attacks of the cramp than formerly, and while the fits continued, lost the use of her senses entirely. After three or four weeks total abstinence from meat and drink, she grew blind; and a little after, she was seized with deafness: yet by her touch she could distinguish her friends, so as to call them by their names. A month after, her sight returned, and afterwards her hearing, both indeed to full perfection. The power of deglutition returned likewise, and she could drink some small-beer or milk-whey; but there followed a delirium, which, however, lasted only about an hour or two: apples or pears she could eat, boiled or raw; but no bread, or any thing solid. Had any thing she ordered been denied, or the least delay made in bringing it, she was immediately thrown into a fit of the cramp. She was some time after obliged to keep her bed perpetually, and every eight or ten days taken up to have her bed made; and even then, the moment her body was stirred, a fit of the cramp seized her, which did not go off till she was again replaced in the bed. A hard kind of swelling rose up about her ears. Some months after, she recovered so far, as to be able to sit up straight for some hours in a chair, and to eat vegetables of any sort; but had a thorough aversion to all flesh-meats and broths.

During the time of her abstinence from meat and drink, she had a nourishing glyster injected once, rarely twice, every day: but even these were obliged to be laid aside for four and twenty days together, as the least motion of her body brought on a very severe fit of the cramp. Her pulse, during her abstinence, was full, strong, and equable, though a little slower than the natural; her breathing free, and urine good. At length, after having for two years suffered all these grievous disorders, in the most easy death imaginable, she went off all of a sudden, as she was conversing in company with her friends.

Many

Many other cases, nearly a-kin to this, may be seen in Medical History^u: but this I principally made choice of, to shew how, from a suppression of the menstrual flux alone, all the natural, vital, and animal functions, might happen to be depraved.

§. 1286. **T**HE redundant blood thus accumulated, frequently opens to itself the most surprising passages, as through the eyes, ears, nostrils, gums, the salivary glands, the œsophagus, intestines, bladder, breasts, skin, wounds and ulcers.

From a vast number of very faithful observations, it is certain, that the blood, on account of suppressed menstrua, being retained, and so of course accumulated within the body, frequently finds out to itself the most surprising outlets. This indeed is, for the most part, accounted for from the vessels being greatly distended by the plethora, and sometimes breaking, or even without breaking, being dilated so far as, by means of an anastomosis, to allow the blood to pass: and yet from thence there does not appear a sufficient reason why this should more frequently happen from a plethora occasioned from a suppression of the menstrua, than from blood accumulated in the body from any other cause. It was said above at §. 1284, that the cause of the menstrual flux could not be solely deduced from a plethora, seeing bleeding between the periods hindered not the menstrua from appearing at the usual time. The very same cause which opens the uterine vessels (which I frankly own I know nothing of) might have the very same effects if applied to the other vessels of the body. That this cause however, of whatever kind it may be, must lie in the vessels themselves, independent of the heart's peculiar action, is pretty demonstrable: for notwithstanding the heart goes on in a regular course of action, yet there is sometimes to be observed, in particular arteries,

ries, a disturbed motion, which frequently precedes hæmorrhages, concerning which we had often occasion to speak in the history of Acute Diseases. Thus a pulsation perceived in any ulcer, declares a hæmorrhage to be near at hand : a pulsation in the left hypochondrium as oft precedes a copious bleeding at the nose, with persons otherwise in very good health. Solano de Lucque has taken notice, that in diseases, a rebounding pulse foretels a critical hæmorrhage at the nose. Physicians, by his example, have been incited to observe, with all their attention, the particular changes in the pulsation of arteries, in order to discover some certain prognostic signs relative to health, as well as to particular diseases. Thus the pulse, called the uterine pulse, which usually precedes the menstrual eruption, is described in the following manner^w. “ This pulse is more raised than at other times, and “ more expanded ; is unequal and rebounding, tho’ “ this rebounding is neither so frequently, nor so distinctly to be felt, as in the nasal pulse, (or that “ which presages the bleeding of the nose ;) but yet “ it is pretty observable.” An anonymous author remarks, that this uterine pulse is more easily to be perceived on the approach of the first period of the menstrua ; as also in elderly women, at the time when the menstrua are beginning to leave them. Not long ago, as I was feeling the pulse of a maiden lady of distinction, above five and forty years of age, I thought I could perceive this uterine pulsation ; wherefore I asked her, whether the time of her usual periods was not very near ; she replied, that three months had passed since she had seen any appearance of them. I was hardly returned to my own house, when I received a line to let me know that the menstrua had begun to appear ; which, for some days, went on to flow in great abundance, as it frequently happens to do at this time of life. The same author likewise remarks, that this pulse is not always to be perceived after the first periods of the menstrua, even though they are very near ; seeing that in very many they flow with the greatest

^w Recherch. sur le pouls parrapport aux crises, p. 95.

greatest ease, without almost any previous sign whatever.

The ingenious Camus * testifies, that he has felt this uterine pulse much in the same way, but describes the rebounding in a different manner; for he thought that the artery, during the time of the diastole, did not strike the finger twice in the same place, but successively at two different points.

In a preceding paragraph we mentioned that wonderful and sovereign power with which the uterus acts upon other, and even very remote parts of the body. If then the uterine vessels, when irritated and disturbed, are not able to send forth the menstrual blood into the cavity of the uterus by reason of too great a resistance at their extremities, why may not they, by means of this same sovereign power, communicate a like disturbance to the vessels of all the other parts of the body? Hippocrates † remarks, that the blood is considerably disturbed (αἷμα παρασσεῖται) even as it is collected, and passes freely away, every month; and therefore pain and uneasiness must be the consequence when the menstrea do not come away. “ But when
“ the blood now set in motion and secreted, does not
“ go out of the body, but remains within the uterus,
“ in which if there should be no opening or outlet,
“ then indeed the uterus being heated by this quantity of blood remaining some time within its cavity,
“ will impart this heat to the rest of the body.” This passage we quoted above. Afterwards, in another place, where he is discoursing of the inconveniencies arising from too sparing an evacuation of the menstrea, he marks out the different parts of the body which are from thence apt to be affected, and adds as follows: *Neither are all these parts pained at the same time, but by turns; and wherever the secreted blood, which the uterus is unable to contain, shall force its way, and upon whatever part of the body it shall happen to fall, there a swelling will take place*‡. I had occasion to see a

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girl,

* Memoire sur divers sujets de Medicine, p. 258.
Pueri, cap. 3. Charter. Tom. V. p. 312, 313.

† De Natura

‡ Neque hæc simul dolent, sed vicissim, quocunque secretus sanguis, qui

girl, about the time of whose menstruation there appeared in her neck a red and painful swelling, about the size of an egg, which, in a few hours after the menstrua began to flow, disappeared entirely. Hoffman^a, before he enters upon his discourse on Hæmorrhage remarks, that every severe kind of hæmorrhage, “ is preceded by a spasmodic constriction of the vessels through the whole habit of body, with a costiveness, for the most part, of the belly, limpid urine, and diminished perspiration: afterwards there follows a quicker and more violent motion of the arteries, with its principal impetus directed towards some particular part.” Now we observed before from Hippocrates, at §. 1284, “ that the orifice of the uterus, in most women, at the time when their menses are about to appear, contracts closer than at any time before.” But, as we shall afterwards see when we come to treat of Difficult Labour, when the orifice of the uterus begins to be contracted, the whole uterus also successively contracts itself in like manner: whence, if the menstrual blood is not squeezed out by this motion into the cavity of the uterus, then the impetus comes to be directed elsewhere, and there follow sometimes very wonderful hæmorrhages, all owing to this governing or consenting principle; by which, as we said before, a disordered uterus may act upon all the other parts of the body.

Nor are there examples wanting to shew, that such an action really takes place *in distans*, as the schools say, or remotely and at a distance. On another occasion, when treating on the methods of checking a spitting of blood, at §. 1200. we took notice, that the most obstinate hæmorrhage at the nose would cease immediately, upon four folds of linen being dipped in the coldest vinegar and water, and applied round the whole scrotum. We read of a similar remedy in that book ascribed to Galen^b, where he orders the testicles

to

qui uteris inesse nequit, impetum fecerit, et qua parte corporis decubuerit, tumor existit. *De Mulier. Morb. lib. i. cap. 7. Charter. Tom. VII. p. 733.*

^a Med. Rat. System. Tom. IV. parte ii. in præfat. ^b De Danamidis, lib. ii. cap. 14. Charter. Tom. X. p. 680.

to be held in the strongest vinegar, to stop an obstinate bleeding at the nose.

It now remains to see by what parts of the body the blood, upon a suppression of the menstrea, sometimes procures itself a passage. It is true, indeed, that in men, from a simple plethora, there has sometimes, though very seldom, been observed a periodical evacuation of blood every month, proceeding from the surface of the skin without any previous hurt. Thus we read of a very surprising case in Marcellus Donatus^c, taken from Beneventus, of a man thirty-six years of age, of a very strong robust habit of body, who voided every month, about a pound of blood from his right side or flank; and upon pressing the part with the finger, and then afterwards removing it, the blood issued out with much the same force as upon opening a vein: when this flux gave over, the skin was so entire, that no one could distinguish the place from whence the blood had issued. By bleeding at the arm every month, he got quite well in about half a year. But, as we said before, though a plethora may be taken off by opening of a vein, yet the menstrual flux is never hindered from appearing at the usual period: for which reason we see, that such excretions of blood, as go out by these unusual passages, on account of suppressed menstrea, hardly ever yield to venæsection; but are only to be cured when we bring back the menstrual blood to flow again, as usual, by the uterus, at stated periods.

Very frequently the upper parts of the body are oppressed by the blood, when it cannot at the usual time find a passage by the vessels of the uterus; as we have already said on another occasion at §. 1017. when discoursing of the Apoplexy. Strange disorders of the head, and sounding of the ears, as Hippocrates observes, precede an eruption of the menstrea; and they come forth whenever a heat, as it were, arises in the back-bone, which declares that the branches of the aorta descendens begin to be more distended; but even

Y 3

then,

^c De Medic. Histor. Mirab. lib. i. cap. 2. p. 11.

then, it was observed, the blood went off by various passages.

By the eyes.] In a virgin of seventeen years, full of flesh and blood, and of a warm habit of body, whose menstua had not as yet made their appearance, drops of a bloody-coloured tinge began to distil pretty fast, like tears, from her eyes. Bleeding in the ankle was here of great service, which soon after was followed by a regular monthly purgation^d.

Ears.] We read of an instance, in a nun, who not having her menstua as usual, a quantity of blood issued out every month by her ears and eyes^e.

Nostrils.] Daily observation makes it manifest, that, both in a state of health, and also in many diseases, the blood-vessels of the nose are disposed in such a way as easily to be dilated; and thus, by pouring out their blood, can either relieve the body when oppressed with too great a quantity, or lead off, along with it, by that outlet, whatever is noxious or diseased. There is no hæmorrhage, however, happens more frequently in a suppression of the menstua, or is more salutary and safe, than that from the nose: whence Hippocrates^f, from the same signs, expected either a hæmorrhage from the nose, or an eruption of the menstua. In another place therefore he says^g, “that it is a good
“sign when a woman, whose menstua are obstructed,
“bleeds at the nose.”

Gums, salivary glands.] These too have been observed to yield a passage: nay, there is even an instance, where, upon pulling out one of the dentes molares, a quantity of blood, equal to that which formerly used to come away by the uterus, was evacuated afterwards, every month, at the place from whence the tooth had been pulled^h. In the same book also are to be seen several other curious accounts relative to uncommon and surprising passages of the menstua. The blood, in the instance above, was evacuated from the mouth; but it is also spit up by the same passage
when

^d Medic. Observat. Exempl. Rat. Dodon. cap. 15. p. 27. ^e Schenck. Observat. Med. lib. iv. p. 635. ^f Predict. lib. i. n^o 145. Charter.

Tom. VIII. p. 796. ^g Aphor. 33. sect. 5. Charter. Tom. IX. p. 214.

^h Schenck. Observat. Medic. lib. iv. p. 633.

when it proceeds from those vital organs the lungs. There is in this case, however, more danger considerably; as we formerly observed, on another occasion, at §. 1198, n° 4. and as is confirmed by Hippocrates, where he says, *In some women, the menses, when they have been stored up and intercepted in the uterus for two months together, are at last carried to the lungs: all things that are said to happen in a consumption befall these women, nor are they ever able to survive it*ⁱ. But it is plain, from what is also said at this particular place, that such effects are chiefly to be apprehended when there is a gathering or stuffing of the lungs: for when this blood by anastomosis is evacuated by a hæmoptoe, then this evacuation of blood by the lungs may go on for several years without any detriment to the health. Nay, Bennet^k, who was so conversant in these sorts of disorders, lays down the following maxim: “That if the lungs are seized with this spitting of blood, critically, and by transumption, it is very often a safe and successful relief to the whole body.”

Oesophagus,] and from thence into the stomach; nay, from the stomach itself also, seeing that its vessels are very numerous, and abundantly easy to be dilated: when the blood, however, is collected there, it is either evacuated by vomiting or by stool. Hippocrates, speaking of suppressed menstrua, says, *They are also thrown up by vomit, and in some pass by stool, &c. they take this course, however, more frequently in virgins than in married women*^l. On the other hand he remarks, *That the flowing of the menstrua shall take away a vomiting of blood*^m. An instance of such a periodical vomiting of blood was observed by Stalpart van der Wielenⁿ, in a girl formerly a servant in his father's family,

ⁱ Quibusdam mulieribus, quum bimestres menses copiosi in uteris existerint, ubi intercepti fuerint, ad pulmones feruntur; his omnia contingunt, quæ in tabe dicta sunt, nec superesse possunt. *De Morb. Mulier. lib. i. cap. 4. Charter. Tom. VII. p. 731.* ^k Tabid. Theat. p. 107.

^l Vertuntur etiam ad vomitum, et quibusdam ad sedem, &c. hanc autem viam minus mulieribus, quam virginibus, menstrua efficiunt. *De Mulier. Morb. lib. i. cap. 5. Charter. Tom. VII. p. 731.*

^m Mulieri, sanguinem vomenti, menstrialis erumpentibus solutio fit. *Sec. 5. Abhor. 32. Charter. Tom. IX. p. 239.*

ⁿ Observ. Rar. Medic. Anat. Chirurg. Tom. II. obs. 17. p. 196.

family, who, at the time of every menstrual purgation, threw up a large quantity of blood: “ yet the girl
 “ found no inconvenience from it, for she continued
 “ always healthy and chearful.” He goes on afterwards to cite many other authors who had left the like observations upon record. Among these, he relates a remarkable case of a married lady about forty years of age, who, in place of the menstrual flux, which had been suppressed for two years, used to have a periodical vomiting of this kind: and, when certain styptics had been administered to her by a surgeon, found herself considerably more afflicted. Timæus, a celebrated physician, tried every method to recal the suppressed menstrua; but nothing would do: seeing, therefore, that this patient could easily bear this bloody vomiting, he committed the whole affair to nature. “ These vomitings, however, lasted till the forty-
 “ eighth year of her age, at which time they ceased
 “ spontaneously; and from thence afterwards her
 “ health became affected by a variety of disorders;
 “ which is commonly the case with women whose
 “ menstrua, through age, begin to leave them.” At the same time, he very rightly observes, that we may attempt indeed, with great safety, to take away the obstruction from the uterine vessels; but before this is done, to stop such a vomiting of blood must be extremely dangerous, seeing that the worst of symptoms, and even death itself, have been the consequence of such a perverse method of cure, as he proves from a number of instances.

Intestines.] That the blood, coming from the œsophagus and stomach into the intestines, may afterwards pass off by stool, is abundantly evident; but it is equally certain, that while the menstrua are suppressed, the blood may be derived, at stated periods, from the mesenteric vessels, into the intestines. On another occasion, at §. 719. when treating of a diarrhœa in fevers, the following was quoted from Galen: “ But we also observe, that such an evacuation of
 “ blood by stool, happens in women who have a sup-
 “ pression of their menses; and in some a like dis-
 “ charge

“ charge of blood by vomiting has proceeded from
 “ the same cause: but then in these cases the blood
 “ is discharged pure, like that which is poured forth
 “ upon slaying an animal; and this is sometimes eva-
 “ cuated downward by stool, and sometimes upward.”

To this head may be referred that evacuation of blood, which comes from the hæmorrhoidal vessels, The vicinity of the parts, and similarity of the vessels, contribute greatly, when the menstrua are suppressed, to promote this evacuation by the hæmorrhoids; whence also Hippocrates^p, and in another place^q where he is recounting the diseases which happen at various times of life, remarks, that the hæmorrhoids do not appear before the time of puberty, nor after the age of forty-two: now the menstrual flux is pretty nearly limited to the same period of time. We have the testimony of very eminent physicians, of the quick and surprising relief they have seen procured from the application of leeches to the hæmorrhoids, in a suppression of the menses^r. Several women I have known, who have had an evacuation of blood every month, both by the hæmorrhoids and from the uterus; and the deficiency by one of these outlets has been curiously supplied by the abundance of the other. Nay, according to some authors, the hæmorrhoids are not only to be found in the intestinum rectum, but also about the uterus itself: for thus we read, “ The hæ-
 “ morrhoids, or piles, are rarely to be found in the
 “ fore part of the privities; but are used to spring up
 “ more frequently about the neck of the womb, and
 “ its orifice.”

Bladder.] Galen^t, when he is recounting the symptoms which usually follow upon a suppression of the menstrua, has the following: “ A pain, besides, of the
 “ loins, neck, forehead, and under the eye, accompa-
 “ nied also with a burning fever, and urine of a blackish
 “ colour mixed with a kind of reddish sanies, much the
 “ same as if you would mix foot with the washings of
 “ flesh

^p Coac. Prænotion. n^o 522. Charter. Tom. VIII. p. 883.

^q Ibid.

n^o 512. p. 882. ^r Friend. Emmenolog. p. 103.

^s Harmon.

Gynæc. part. poster. Spach. p. 33.

^t De Locis Affect. lib. vi.

cap. 5. Charter. Tom. VII. p. 524.

“flesh meat newly killed.” We know that blood, whether flowing from the kidneys or ureters, or from the bladder, when it mixes with the urine, acquires a deep tawny colour, almost like coffee. An instance of such an evacuation of blood supplying a deficiency of the menstrea, we read of in Holler^u: “There is a
 “certain passing of blood by urine, which is critical,
 “and comes on at particular intervals, such as that
 “of the Nun mentioned by Musa, who, every month
 “while her menstrea were suppressed, passed a large
 “quantity of blood by urine.”

Breasts.] As there is such a manifest communication between the breasts and the uterus, which we have already so frequently taken notice of, we need be the less surprised to see the blood derived, upon a suppression of the menstrea, into the breasts, and so pass out sometimes at the nipples. Hippocrates has said, *That when the uterus is shut up, it throws back the menses upon the breasts, and forces them to go up towards the thorax*^w. Parey^x knew a woman whose menstrual blood went out every month by her breasts, so that she was obliged to have three or four cloths always in readiness to receive it. Whilst a woman, about forty years of age, was raging in a violent fit of anger, the blood burst out of her nipples, and in so large a quantity indeed as to wet all the rest of her body^y. Some such cases I myself remember to have seen.

By the skin.] The vessels of the skin, notwithstanding they allow commonly only the finest humours to pass, yet are capable of being so far dilated as to pour out blood itself. It has been observed, that, in the hottest months of summer, the sweat expressed by the force of hard labour and exercise hath tinged the linen red, and principally about the arm-pits. Mercatus^z assures us that he had three times seen “the blood
 “issue out, but in a small quantity indeed, every
 “month,

^u Oper. Practic. lib. i. cap. 52. p. 436.

^w At conclusi uteri menses ad mammas remittunt, et ad pectus ascendere cogunt. *De Mulier. Morb. lib. ii. cap. 20. Charter. Tom. VII. p. 807.*

^x Oeuvres S. Ambr. Pare, liv. xxiv. chap. 62. p. 631. ^y Stalpart. van der Wiel Observat. Rar. part. i. p. 342. obs. 79. ^z De Mulier. Affect. lib. i. cap. 7. p. 469.

“ month, from the little finger of one hand, and the
 “ ring finger in the left hand, in a certain religieuse,
 “ to whom nature had denied a menstrual purgation
 “ by the uterus.” Zacutus Lusitanus ^a was an eye-
 witness to such another extraordinary instance of men-
 strual evacuation, in a country maid of four and thirty
 years of age: for he saw “ a small stream of pure
 “ blood proceed from the interior fleshy part of the
 “ great toe of her left foot, near to the nail, and run-
 “ ning very sparingly and slowly into a phial filled
 “ with hot water.” This evacuation went on for three,
 or frequently four days; then when the hole stopped,
 she went about her country work again without any
 uneasiness. She assured them, that when it happened
 to her, as it had done seven times within the space of
 ten years, that, when the blood did not flow from
 this opening in so great a quantity as usual, then a
 pain of the head and fever were always sure to suc-
 ceed: but in that case, opening a vein in one or other
 of the feet, or rather the right foot, always relieved
 her; for when, by order of the physician, the vein was
 opened in the left foot, there was a violent pain raised
 in her knee and toe, and for a year this evacuation
 of blood did not come so properly, or in so salutary a
 manner, as it had been usually accustomed to do.

Particular wounds.] Paracelsus ^b affirms, that “ he
 “ saw the menstrual blood, in a certain woman who
 “ happened to be wounded, flow, not from the usual
 “ places, but from the very middle of the wound.”
 This however very rarely happens; but much more
 frequently.

By ulcers.] We have an account of a pretty re-
 markable case, which sufficiently demonstrates the
 truth of this ^c. A healthy, vigorous, country girl,
 strained her right foot when she was fifteen years of
 age: the like mischance happened to her again, in the
 same place, when she was nineteen; and then, a for-
 did ulcer broke out upon the part where she received
 the hurt, which healed up in about three weeks time:
 soon

^a Oper. Tom. II. p. 404.

^b Chirurg. Magn. parte i. Tractat. I.

cap. 11. p. 8.

^c Medical Essays and Observ. Vol. III. n^o 9. p. 280.

soon after, her whole body began to be disordered: about the twentieth year of her age, her menses began to flow for the first time, but in very small quantity. Her disorder continuing to increase, she was bled at the vena saphæna of the right foot: not long after, an ulcer arose in her ankle, which continued open for the space of five years, and a considerable piece of the os calcis came out by the fore. Every month, for two or three days together, a quantity of blood, equal to what is usually evacuated by the menstrua, passed out by this ulcer; and that periodically, for no blood came away during the intermediate time. Some days before this evacuation, she suffered a most severe pain in the foot, which went off as the hæmorrhage from the ulcer returned. At last, all the carious bones being separated, the ulcer began to heal up, her whole body grew plumper and stronger; and then her menstrual flux came away in the natural way, in the same quantity, and continued the same number of days, as it used to do, when it formerly issued out from the ulcer. She lived afterwards in very good health, having always a regular return of her menstrual flux at the usual place, and no more blood coming away by the ulcer, which as yet was not quite healed up.

Thus it is abundantly evident, that the menstrual blood, when it cannot obtain a passage by the usual places, will force its way through different parts of the body. The celebrated Ruyfch^d thought that he had some reason to doubt, whether the menstrual blood did not sometimes get into some cavity within the body, and there remain collected: for in a woman's body, who died menstruating, he found the blood a little coagulated, adhering to the sides of the internal cavity of the womb, "with which, not only the tube
" of the one side was stained, but also the ovarium;
" to the surface of which, a good quantity of coagu-
" lated blood firmly adhered." This uterus, with the annexed ovarium, and the coagulated blood, he had embalmed and preserved in his own repository, that every one might see it. In the rest of the cases
above

^d Observat. Anatom. Chirurg. Cent. n^o 85. p. 80.

above mentioned, the blood was carried out of the body, though by very uncommon passages; but in this case, the blood poured out, and collected within the body, must corrupt, which would be still more dangerous by far.

Many other cases of the same kind might be collected, several of which I myself have had occasion to see, mostly indeed of young girls, who have been thrown into a strong fit of terror, or any other violent affection of the mind, at the time their menses were first about to appear. Such was that case we have of a girl^e, who about the third period of her menstrua, from a grievous fall she happened to receive, vomited up blood; and her menses afterwards, either being entirely suppressed, or at least appearing in the smallest quantity, for twenty-nine years together led the most miserable life, ever liable to the most frequent hæmorrhages at the mouth, nose, ears, eyes, intestines, breasts, and from the roots of the nails in both fingers and toes.

I shall only add one case more, which was found among Boerhaave's papers after his death, in his own hand-writing, and given to me by his heirs. A girl about ten years of age, on account of some suspicion of a lues venerea, had mercurial pills and decoction of the woods given her, which was attended with pretty good success. In nine months after, she perceived a pain and stiffness in her right arm: a good many pustules broke out, in which she felt a pricking pain; and pure blood, a little afterwards, issued out of these pustules: immediately after this, all the pustules vanished, not leaving a vestige behind; and the pain, at the same time, went wholly out of her arm. A month after, when she entered upon the twelfth year of her age, all the same symptoms returned, and were immediately succeeded by the first period of the menstrual flux; which, in a month after, returned in the same manner, ushered in by the same hæmorrhage from the pustules in her arm.

In order to reduce the menstrua to a more regular course, emmenagogues were administered, and she was

bled at the feet; with this good effect, that the menstrua returned by the proper place, in due order and quantity, without being preceded by the hæmorrhage from her arm as formerly. But as the winter was very severe, when her hands grew cold, the blood immediately issued in considerable quantity from the ends of her fingers, without the least appearance of any opening or pustule whatever. By being cherished with warmth and flannel, and afterwards, the spring-season coming on, the disorder abated, and the menstrual flux, for four months, came away at the usual time, and in proper quantity.

Then again, forsaking the natural course of the monthly period, every day, or every two days, or sometimes once in eight days, the blood distilled by drops from the skin of the fingers of the right arm; nor could the eye distinguish, upon wiping the skin, any opening from whence the blood proceeded. It happened some time afterwards, that, having oozed out blood all the morning from her fingers, she was, past noon, seized with a vertigo, and redness in the face: soon after, the larynx was raised up into a pretty conspicuous swelling outwardly, with a kind of hysterical stifling in her throat: a little afterwards, more little sources of blood were opened, and poured down their streams, from the fore-part of her neck; upon which the vertigo, redness of the face, swelling of the larynx, with sense of suffocation, all went off.

Another time, her left hypochondrium was blown up, swelled, and very painful: this complaint was relieved by the application of an aromatic plaster. By bleeding in the foot, and by the use of anti-hysterical remedies, emmenagogues, and bathing, the bad symptoms were indeed a little mitigated; but yet, as the menstrual flux remained still suppressed, there was hardly a place in the body they did not attack.

Again her face reddened all of a sudden: then came on a large bleeding at the nose; this was not yet stopped when the larynx swelled, which again went down as the blood began to ooze down from the fore-part of the neck: the self-same day, too, the blood issued

from

from her right arm, and the calf of her right leg: towards evening, her right side was seized with a spasm all over; she bore it however with great firmness: then her eyes, lips, neck, hands, knees, were all convulsed alternately, and her stomach swelled up very much: at ten o'clock, these disorderly symptoms were in some measure composed; there only remained a weakness and immobility in her right arm, nor could she stretch out her right knee. The swelling about her stomach continued, with a sensation of heart-burn; and there came on a blindness upon her left eye, the only part of this side which had been affected.

After trying various remedies, she recovered the motion of the right arm; but neither the swelling of her belly went off, nor could she stretch out her leg, nor was the sight restored to her left eye.

About a month afterwards, her left eye swelled all of a sudden; from whence, soon after, the blood, like tears, poured out in great abundance; with no relief, however, to the blindness. Then followed an oozing of blood from the skin of the nose, where it covers the left lachrymal sac: after that a hæmorrhage at the nose, which was immediately succeeded by a spitting of blood, and streams of blood pouring down from the nails of her right hand, and from that side of the arm which is nearest the little finger. The calf of her right leg at the same time swelled up; but this tumour went off without any oozing of blood by the skin. Two days after, being seized with a sudden fright, the blood poured out by drops from her left eye, as also from her right arm and hand, according to the course of the larger veins, though not in any remarkable quantity.

An hysseric plaster was applied to her belly; and emmenagogues, baths, anodyne antihysterical mixtures, were also administered: the menstrea, which had been two months suppressed, now appeared but in very small quantity, and the swelling of her belly went down.

Here, in the manuscript, the history of this surprising disorder ends. From whence we see what various and surprising mischiefs may arise from a suppres-

sion of the menstrea; and at the same time we have a confirmation of all that has been formerly said concerning those various and wonderful outlets, by which the blood, that naturally ought to be discharged by the uterus, finds out a passage.

§. 1287. **A**ND very often all the viscera are injured by this accumulated blood, and an infinite number of diseases produced (§. 106.) partly from a putrefaction of the liquids, and partly from the hurt done to the vessels.

It has been said before, at §. 1285. that almost all the natural, vital, and animal functions were liable to be injured from a suppression of the menses, partly by reason of the blood being retained, which ought, by the law of nature, to be evacuated; partly from an irritation of the uterus, which by the action of regimen (the governing or consenting principle) may have power to hurt the different viscera, or at least greatly to disorder their functions. What various and surprising diseases may be produced from the menstrual blood, when it passes not freely by the accustomed and natural outlets, but is forced to make its way out of the body by those extraordinary passages, sufficiently appear from the instances given under the foregoing aphorism.

Now we must observe, that, in the cases hitherto mentioned, the blood which passed was in itself wholesome and pure, such as, to use the expression of Hippocrates, flows from a victim newly slain; but if, by gathering within the substance of the uterus, or any other of the viscera, it should, through length of time, begin to be corrupted, and acquire an acrimony, then indeed disorders of a more obstinate and dreadful nature may justly be apprehended. The blood stagnating within the cavity of the uterus, as will afterwards appear at §. 1290. if all access to the external air be denied, may remain a long time without being corrupted: at last, however, by too long a continuance, it will degenerate altogether, and may there occasion
the

the very worst of mischiefs. We frequently see women become infirm, and greatly disordered in their health, at that time of life when the menstrual flux naturally begins to leave them: how much more readily, then, must this be the case, where the menstrea are preternaturally suppressed? Manningham, in his very useful Compendium of Midwifery^f, observes, that “more women die between five-and-forty and fifty years of age, than at any other period of life what-ever.” It was before remarked, in the chapter upon Schirrhus, that schirrous and cancerous tumours were most frequently observed to happen at that time of life. But from the authority of Hippocrates, we are assured, that the menstrual blood may be corrupted by being too long retained: *And after two or three months retention of the menses, they sometimes break forth all of a heap from the pudendum; and what comes away, appears like clots of corruption, and is quite black^g.* At the same time he remarks, as we mentioned before at §. 1285. that ulcers might be produced in the uterus from such a state of acrimony and corruption of the blood, which would be attended with danger to life itself. Nay, from the superabundant collection, alone, of the female menstrea, that is, when they come not properly away, he elsewhere presages many mischiefs. *A distension of the loins, from a great quantity of collected menstrea, is very liable to suppurate: the menstrea, which come away irregularly, are viscid, smell disagreeably, or are choaked up, and on the same account have also a tendency to suppuration; and women so affected, I think, are a little inclined to be delirious^h.* Whence it is not absurdly expressed by Helmontⁱ, where, in

Z 3

treating

f P. 49.

^g Et postquam duo aut tres menses præterierint, interdum et per pudendum menstrea consentim erumpunt; et quæ prodeunt, velut carunculæ esse videntur, velut ex corruptione, et nigra sunt. *De Mulier. Morb. lib. i. cap. 6. Charter. Tom. VII. p. 732. 733.*

^h Lumborum distensio ex muliebrium mensium multitudine, ad suppurationem tendit: et varix prodeuntes, viscosi, graveolentes, strangulatorii, menses, ex prædictis, ad suppurationem tendunt: arbitror autem, tales etiam aliquantum delirare. *Coac. Prænot. n^o 324. Charter. Tom. VIII. p. 870.*

ⁱ In Capitulo, *Lunare tributum*, p. 584.

treating of the menstrual flux, he says, "First of all
 " it abounds to excess, then it overloads with its fu-
 " perfluity, afterwards it loses all its life and spirit,
 " and at last becomes a poison."

When a redundance only of good and wholesome blood can produce the bad effects enumerated at §. 106. what worse consequences may we not expect from humours that have stagnated a long time, and acquired a great degree of acrimony! by which the vessels are not only much more injured, but more dangerous diseases produced, either in the uterus itself, or in some other of the viscera, to which the menstrua may have found their way, sometimes by their dilated extremities, if the vessels have remained entire; sometimes (which, as we observed before, is much worse) by erosions through them. Hence also appears the reason why Hippocrates has said, *That all womens disorders spring from the uterus*^k.

§. 1288. **T**HIS disease is known, 1. From the age of the patient. 2. From her full growth. 3. From a plethora. And, 4. From the signs of the subsequent disorder.

1. It was remarked at §. 1284. that the time of life, when the menses first make their appearance, is different in different countries: nay, I myself have sometimes observed a great diversity in the same family, some girls menstruating sooner than their sisters by two years, though all of them have enjoyed the very best health.

2. As to what we are to determine concerning this head, we must refer the reader to what has been said at §. 1284. where it appeared, that the menstrual flux did not always follow after, but more frequently was observed to precede, the full growth of the body.

3. In like manner, we must refer to the same place for what is to be judged concerning a plethora being the sole cause of the menstrual flux. It is true indeed, that about the eruption of the menses there is a greater redness

^k Morborum omnium uteri causæ sunt. *De Locis in Homine, cap. 18. Charter. Tom. VII. p. 376.*

redness in the face, and the eyes look brisker and more lively. The swelling of the breasts too gives the most frequent indications when the uterus is become ready for the first eruption of the menses. But unless all those signs of a plethora appear which have been already mentioned at §. 106, we must not by any means think of it as a cause: For it sometimes happens, that the menses either do not appear at the usual time; or, if they do flow, stop soon afterwards, on account of a bad, sluggish, cold, phlegmatic habit of body: In such there is no redness in the blood; their cheeks, lips, and gums are pale; upon opening a vein, there is a small bit of reddish concremented blood swims a-top, in a large proportion of serum, which sometimes has a mucous, slimy kind of visciduity. As to girls in this situation, if the cure of a plethora is attempted, every thing will be sure to turn out for the worst; seeing our principal aim must be, in the first place, to correct this bad habit of body: for, as we have already observed at §. 1285, patients of this sort are deprived of the menses by reason of their bad state of health, which is the cause of their disappearing, and not the effect resulting from their deficiency.

4. Here again we have need of the greatest attention to guard against some errors, which, in practice, may be of the most dangerous consequence. About the time of life when the menses appear, a virgin may be taken with other disorders, which may not in the least depend on the approaching menstruation, but may arise from causes extremely different; and yet it is noways uncommon to see every thing ascribed, which happens at such a time, to this cause alone, not only by ignorant women, but sometimes even by physicians, less attentive to every minute particular circumstance, while they are engaged, or rather overwhelmed, in a crowded and extensive practice. I have known it sometimes proposed, to administer very powerful emmenagogues in the beginning of the small-pox. When the first of the infection has occasioned a pain in the back, and redness of the face, together with shivering, and a slighter kind of feverishness; and when a physician,

cian, who knew better, has, at the earnest intreaty of the patient's mother, been called; it has been with the utmost difficulty he could procure a delay of twenty-four hours, in order to form a surer diagnosis of the distemper, before the emmenagogues should be administered.

Besides, mothers are frequently too solicitous, when a certain time of life draws near, to force, as it were, physicians to administer every remedy they have a fancy can forward an eruption of the menses.

Whereas it is the proper business of nature, so to dispose the uterus by slow degrees, and gently dilating the extremities of the vessels, properly to send forth the menstrual blood: this however, from what has been already said, must happen, we see, at various times of life in different individuals. I shall never be ashamed, for my own part, to confess, that I have, on these occasions, acted the part of a mere observer; and making use of a little honest medical craft, have ordered only what I imagined would give the least disturbance to the body, and be in no danger of increasing too much the motion of the humours, that whilst I was really doing nothing I might seem to do something, and by this means get rid of their querulous importunity.

For it has very often happened, that in attempting, for several months together, by hot stimulating remedies, to bring down the menses, they have given rise to other diseases; or so weakened the uterine vessels by the frequent use of bathing, that the menses, indeed, have come down, but afterwards have flowed in far too great abundance, returning almost every week, not without much detriment to the health, and too just apprehensions of sterility.

What was said of the time, holds true with regard to the quantity, of the menstrual flux; which, as was before observed, is not so great as many have imagined; and is different in different women, however healthy and fruitful, according to their various habits of body and manner of living.

When, therefore, the usual time of life is at hand,
and

and both the breasts begin equally to form ; when there is a sudden growth to be observed in the body, and the face looks more than usually florid ; if there is perceived at the same time a pain in the loins and small of the back ; a stiffness, with an obtuser sort of pain, about the neck and groins ; we may then be pretty certain that the female body is disposed for the menstrual eruption. Then it may be proper to assist the first efforts of nature by gentle bathing, friction of the legs and thighs, and the milder emmenagogues. In some, though not very frequently, the first menses flow without any uneasiness ; and the vessels of the uterus being once opened in this manner, the after-periods have gone on regularly without any of these symptoms just now mentioned ; at least they seldom appeared, or, if they did, were never severe.

§. 1289. **I**N order to carry off the redundant blood, various remedies are required, according to the various causes of the disorder.

It is necessary in the cure, that the menstrual flux come away in due time, and in proper quantity : but as the causes which hinder this may be very various, so they also must require a different method of cure. Nothing general, therefore, can be determined on this head ; but, in order to obtain a successful cure, we must be carefully attentive to every particular cause, which may occasion a suppression of the menses ; for if the most celebrated and powerful emmenagogues are given, when these outlets, by which the blood should naturally flow, are entirely shut up, (which we shall presently explain), they may do a great deal of harm, but never can be of any service. It would be in vain for us to attempt to bring down the menses in a pale leucophlegmatic girl, where, for want of sound blood, the functions are all languid, till we first strengthen her lax and weakly body, and enable the vessels and viscera to extract a proper quantity of good blood from her aliment. On the contrary, if the uterine vessels are too much contracted, then an opposite

site method of cure is requisite; for this resistance of the vessels is only to be removed by the most emollient remedies, externally and internally administered; and so of the rest, each of which causes we now proceed to consider separately.

§. 1290. **A**MONG which, there is sometimes a natural, and sometimes an occasional concretion of the pudenda, that requires the hand of a skilful surgeon to open, with a proper instrument.

Notwithstanding there may be a proper quantity of good blood, and it may be transmitted in due time, by the uterine vessels, into the cavity of the uterus; yet, unless there is an open passage to convey it from the mouth of the uterus into the vagina, and so from this out of the body, the menses will still continue to be suppressed: for we are assured from a great number of observations, that the privities, sometimes, are either so grown together, or there is a membrane runs across the cavity of the vagina, which stops up the passage in such a manner, as not a drop of blood can possibly get out.

This growing together of the pudenda is, however, sometimes *natural*: as, for instance, when it is observed in a child on its first coming into the world; whence midwives are commoly desired carefully to examine the parts of new-born infants, to see if any such defect is to be found. Yet in this case it is very evident, that we can only discover that growing together which obtains between the lips of the pudenda; but as to any other impediment, which may be seated up in the vagina, or in the orifice of the uterus itself, we can hardly have any certain knowledge before the proper time of the flowing of the menses.

Such a growing together, however, happens more frequently after certain disorders in these parts, such as excoriations, inflammations, ulcers, &c. and then it is called *occasional*.

A defect of this kind may, besides, take place, either in the orifice of the uterus; or in the vagina; or in both, though this very rarely happens. Under the name of vagina are also comprehended the parts of the pudenda which are commonly considered as external.

We shall first examine those impediments which block up the orifice of the uterus, so as to occasion a suppression of the menstrual flux.

These particular causes of suppressed menses have been taken notice of by the ancients. For thus we read in Hippocrates: *When the uterus is indurated, (i. e. scirrhus) the orifice becomes rough and jagged, and the menses disappear*^l. A little after he adds, *And the orifice is shut up, nor does it conceive: In this condition, upon touching it with your finger, you'll perceive a roughness, nor will it allow the finger to pass farther up*^{*}. He repeats the same afterwards^m. Besides, in another place, he makes express mention of the membrane which shuts up the orifice of the uterus. *If there is no conception, notwithstanding the regularity of the menstrual flux, a membrane is certainly stretched over the mouth of the uterus. This, however, you may know, when, upon introducing the finger, it meets with such a sort of resistance*ⁿ. It is true indeed, that in this place he is speaking of a woman who is barren, yet so as to have her menses flowing in a natural way. But how the menses are to get out of the orifice of the uterus, which is so closed up as not to admit the seed, I own is not so very easy to conceive. Hence it seems probable, that in the text the negative particle $\mu\eta$ has been omitted.

For in another place he repeats the same^o; and
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^l Si uteri indurati fuerint, os asperum redditur, et menses delitescunt. *De Natur. Mulieb. cap. 37. Charter. Tom. VII. p. 707.*

^{*} Et eorum osculum clauditur, neque concipit. Quum sic habuerit, si digito contigeris, os asperum deprehendes, neque digitum intronmittit. *Ibidem.*

^m *Ibid. cap. 39. p. 708.*

ⁿ Si genituram non recipiat, mentibus secundum naturam prodeuntibus, membrana ori uteri prætenditur, quod etiam aliis ex causis contingit. Id autem cognosces, si digito ad attrectandum immisso obicem attigeris. *Cap. 68. ibid. p. 715.*

^o *De Mulier. Morb. lib. i. cap. 20. Charter. Tom. VII. p. 743.*

in the various readings ^p upon this place of the text, it is remarked from Calvus, that some manuscripts, in place of *ερχομένων*, have *μη ερχομένων*. In that case, indeed, the text of that whole chapter will be more easily understood, which begins thus: *Quod si diu non concipiat, non apparentibus mensibus, &c.*

Then follows the text just now cited, which, upon this supposition, would be read thus: *Si mulier genituram non recipiat, mensibus non secundum naturam prodeuntibus, &c.* "If a woman does not receive the seed, the
" menses not coming away according to nature, &c." In the first text, the menses were altogether stopped: in the second, they did not flow according to nature; perhaps only in too small a quantity from the vessels of the vagina alone; by which also, as we have already observed, the blood sometimes comes away in women with child. But whatever way we determine the emendation of the text, this at least is evident, that Hippocrates makes express mention of the membrane which preternaturally shuts up the orifice of the uterus.

We have evident confirmation, from anatomy, of the existence of such an impediment to the menstrual flux, as may be seen in the academy at Paris^q, agreeable to what we mentioned at §. 1285.

Antonius Benevoli^r, a celebrated professor of surgery, has related a very remarkable case, where, by a happy mistake in trying to introduce a catheter into the bladder, to relieve a stoppage of urine, he pushed it into the vagina, and through the orifice of the uterus; and by that means snatched a young girl of eighteen years of age from the very jaws of death, whose belly had been swelled up entirely from a suppression of the menses. For as the extraordinary distension of the uterus, pressing upon the neck of the bladder, had been the original cause of the stoppage of urine, the catheter could not be introduced into the bladder without the utmost difficulty, which when he attempted the morning following to do, for a whole hour together,

^p Ibid. p. 899. n^o 129.

^q Academ. des Scienc. l'an 1704. Hist. p. 33.

^r Dissertazioni, &c. c. Osservazioni, p. 79, et seq.

ther, he had no success; wherefore, changing the patient's posture, he endeavoured again to make it out, though in this situation he could not so readily distinguish whether the catheter went right or not. Thinking, however, that he got within the sphincter of the bladder, and vexed at the long delay, and impatient to give the girl relief, he pushed the instrument with a little more force; upon which there immediately came through the catheter a dark-coloured liquor, not unlike the dregs of wine, which he took to be bloody urine, knowing that a few drops of blood were able to give a similar tinge to the urine contained in the bladder. However, after a great deal of ugly-coloured liquor (to the quantity of two and thirty pints) had been evacuated by the catheter, he then observed the clear urine rush out with considerable force, but not by that instrument: and from thence he was assured, that this instrument had not entered within the bladder, but had penetrated into the cavity of the uterus; for he had met with no resistance in the vagina. The girl immediately was sensible of vast relief, and joyfully recounted to him the whole history of her disorder: which was, That her menses had never appeared to herself; that it was then three years since her belly had begun gradually to swell; and that every month, on some particular days, there had been an additional increase to the tumour in her belly, till it had reached to that enormous bigness.

Next morning, having introduced his finger into the vagina, he found it to be so as he had imagined, and dilated the orifice of the uterus to let the grosser matter out which yet remained within its cavity. Agreeable to this intention, in a month's time, a great deal of thick stuff came away, mixed with pieces of a corrupted slough: this evacuation he promoted, however, by deterging the internal surface of the uterus with injections of vulnerary decoction and honey of roses; but after that the evacuation began to lessen, and the matter had put on a better appearance, he then made use of injections of vinum myrrhatum; and thus the girl, in two months time, went home to

her own country, quite recovered. After eight or ten years, however, she returned much troubled with some hysterical complaints, which were reckoned to proceed from her former disorder, as every method that was tried by the physicians, proved ineffectual to restore the menstrual flux. The ingenious Benevoli was the more surpris'd at this, as in three other girls, whose menses were suppress'd from a membrane shutting up the orifice of the uterus, and which he had cut in order to procure a passage to the collected blood, the menses returned at very regular periods. He very well observes, however, that in the first case the blood, remaining so long as three years in the uterus, might work such a change in the inner surface of it, as to shut up the extremities of the uterine vessels, and so disable them from transmitting the menstrual blood.

It is self-evident, that in a case of this kind there is no other remedy left, but the hand of a skilful surgeon to cut through this membrane stopping up the orifice of the uterus, and gradually to dilate it, as in the case above was really done. Hippocrates, in cases where the lips of the os uteri grow close together, gives the following directions: *Wash it well with plenty of warm bathing; and, after having applied something emollient to the orifice, endeavour to open it by introducing a probe; which you may likewise do with your finger^s.* And in another place he says, *You are to dilate the os uteri, after it has been well washed and fomented, with a probe made of tin or lead, or, if necessary, with your finger, beginning with the smallest; then with a bigger, as it will admit, till you shall think it sufficient. Anoint your probe, however, of whatever size, with something liquid and emollient, and make them pretty thick towards their posterior part,* ^t &c. Elsewhere

^s Copiosa callida lavato; et que os emolliunt apponito; immissoque specillo aperito, quod per digitum eodem modo facito. *De natura muliebri, cap. 39. (Arter. Tom. VII. pag. 708.*

^t Quum vero lota et fota fuerit, os uteri, specillo stanneo aut plumbeo dilatato, simulque, si opus fuerit, digito, a tenui auspiciatus; deinde crassiore,

where he remarks, *That when a woman cannot rightly take in the seed, there must necessarily be a membrane grown over the orifice of the uterus* ^u. This, however, he seems inclined to take away by means of flos æris, bullock's gall, &c. nevertheless, it is better and safer to cut through such a membrane, as the os uteri, being so very sensible, may readily be hurt by remedies so very acrid. Nay, he himself advises a little afterwards, *That nothing acrid might be administered: for, if the os uteri happen to be ulcerated, should it be inflamed, there is a hazard lest she turn out barren altogether* ^w.

But those menses come easiest away of all, which, at the proper time, when the uterine vessels are dilated and open, gently ooze out by the os uteri, now softened and yielding to a free discharge. To this, however, it is necessary that the mouth of the uterus be placed in a line with the vagina, as it commonly is by nature; yet sometimes, as we shall afterwards see in difficult births, the os uteri is observed to decline from this straight situation, towards either the anterior, posterior, or lateral parts of the pelvis. From this wrong situation may arise obstacles to the free efflux of the menstrual blood: nay, even entire suppressions; according as the os uteri, pressed upon by the neighbouring parts, shall be in part shut, or altogether blocked up: whence Hippocrates has remarked, that the menstrual flux may be hindered by an aukward situation of the uterus ^x; and elsewhere he says, *If the uterus be removed towards the hip-bone, then the menses do not come right away; at the same time, a pain arises about the ilia and lower belly; and if you touch it with your finger, you will find the orifice got to-*

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ore, si admiserit, donec probe habere videatur. Specillum autem emolliente, quodcumque conducere videbitur, dissoluto et liquido reddito, intingito. Specilla lata posteriore parte conficito, &c. *De infæcundis*, cap. 8. *Charter. Tom. VII. p. 847.*

^u Quum mulier genituram excipere non potest, membranam uterorum osculo adnatam esse, omnino necesse est. *Ibid. cap. 11. p. 851.*

^w Nihil acre adhibendum: si enim os uterorum exulceratum fuerit, quum inflammatum fuerit, periculum est, ne prorsus sterilis fiat. *Ibid. cap. 13. p. 853.*

^x De locis in homine, cap. 18. *Charter. Tom. VII. p. 376.*

wards the coxendix^y." He also remarks, that sometimes the uterus shall cover one half of the loins^z; and subjoins a little afterwards: *But in cases where the orifice inclines another way, and lies upon the haunches, (for the effect of this is, to hinder the purgation of the uterus, the receiving of the seed, and the having children) you must foment it with something that is perfumed, and, after the fomentation, bring it down with your finger, and remove it from the haunches; and afterwards keep it in this direction by means of little links introduced, and pipes of lead; but without using much force, as hath been already said^a.* Many other remarks of this kind we meet with in several places of his works. Above all, he recommends emollient fomentations; and, when these have been used, advises to put up the finger, in order to bring the os uteri to its natural situation. He seems also, after the use of emollients, to have employed some sharp stimulating remedies; that the uterus, by their vapour, being irritated, might contract itself, and so change its situation. Thus he advises "washing the parts plentifully with something warm, and fomenting the uterus, and the woman to be placed above a vessel of stale urine made boiling hot, taking care at the same time that she be well covered up with clothes. But the urine, when it grows cold, is to be warmed again, by means of a red-hot mass, and the fomentation continued, till she says her eyes can hardly see, or that she is fainting^b." It is plain, therefore, that the os uteri, being either shut up, distorted, or indurated, may occasion a suppression of the menses; as also the menstrual blood, contained within.

^y Si uteri ad coxendicem decurrerint, tum menses non prodeunt; tum dolor ad imum ventrem, et ilia, pervenit; ac si digito contingeris, os in coxendice deprehendes. *De natura mulieb. cap. 8. Charter. Tom. VII. pag. 685.*

^z De morbis mulierum, lib. ii. cap. 19. Ibid. p. 807.

^a At quibus osculum alio inclinatum, et coxendicem incumbit (hæc enim etiam sunt, uterumque purgari, et genituram suscipere, liberosque procreari prohibent) hanc odoris fovere oportet, et post fomentum digito revellere et a coxendice abducere, posteaque tædulis et plumbea fistula dirigere; neque enim celeriter coegetur, ut dictum est. *Ibid. cap. 20.*

^b Ibid. cap. 23. p. 813.

within the cavity of the uterus, may be denied a free discharge by the perverse situation of its orifice. At the same time it appears, that often these causes are not so easily to be discovered.

What we more frequently meet with, is a growing together of the pudenda, shutting up the passage; or even a membrane dividing the cavity of the vagina into two, so as to retain the blood which comes down from the uterus. Such a preternatural membrane, though it is even seated pretty high up, when pushed out by the blood distending it, comes down sometimes as far as the orifice of the pudenda, and is obvious to the eye-sight. But the hymen, about which there is so much dispute among the anatomists, may also obstruct the passage of the vagina: naturally, however, it is perforated; as may be more particularly seen by drawing the lips of the privities aside; for then a small oblong opening, or chink, is to be observed: stretch them a little more, and you will see a roundish hole: on letting the parts go, and leaving them to themselves, the hymen first closes to an oblong form, then to a small chink, and at last, when the parts recover their situation, disappears entirely. Such a hymen the celebrated Albinus says he found in a full-formed embryo, in children and infants of different ages, young girls, and in maids about twenty years old^c; and, as he always does, has given exact descriptions of them, illustrated with elegant figures. Naturally, then, the hymen allows a sufficient opening for the menstrual blood to pass: but sometimes it is observed to degenerate into a close thick membrane, without any opening whatever. Thus Diemberbroeck affirms^d, "That in the public theatre he had dissected
 " a young woman, about twenty-three years of age,
 " in whose body he found this membrane entirely
 " continued without the least perforation, and so firm,
 " as might resist, without breaking, the most vigorous
 " assaults of the stoutest male champion." These are termed *atreta*, or imperforated; several instances of

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^c Academ. Annotat. lib. iv. cap. 10. p. 49, & seq. ^d Anat. lib. i. cap. 6. p. 149.

which are to be met with in medical history. But preternatural membranes of this sort are not only to be found about the orifice of the vagina, but also a good deal higher. Such is that surprising case we find in Ruysch^e. A woman big with child had suffered so very intense labour-pains, that she filled the whole neighbourhood with her distressful cries; nor could all her strongest efforts avail in the least towards quickening her delivery. Ruysch being called, “ he found “ the membrane hymen entire, and vastly thick, and “ pushed out by the head of the fœtus endeavouring “ to make its way.” This membrane he divided with a pair of scissars, introduced upon a director, to prevent the child’s head from being injured. The labour, however, was by no means advanced: for another membrane presented itself, obstructing the passage of the vulva a little deeper; which being in like manner cut through, a stout lively young infant was immediately brought into the world, without injury to the mother, who, in a few weeks recovered quite well; and she, together with her young one, were both in very good health at the time when Ruysch first communicated this very surprising case to the public. The circumstance, in this woman’s case, the most extraordinary, was that her fruitfulness should be in no shape hindered by such a double obstacle; but as to that, we shall speak more at large in the following chapter.

It is easy to see that a suppression of the menses, arising from such a cause, can only be cured by the hand of a skilful surgeon, which can alone remove the obstacle. We may know when such an impediment takes place, if, at the usual time, all the symptoms of the menstrual flux appear, yet are not followed by any such discharge; if the same symptoms return every month, and the uterus at the same time shall grow more and more turgid, and cause the belly to swell; if this swelling be observed to lie chiefly about the lower part of the abdomen, of a spherical form, smooth, soft,

soft, and equal^f; or, when you press it, there shall be nothing perceived like the stirring of a child; if this disorder shall have lasted long, and the swelling increase so far, as much to exceed the common size of a woman with child, a little before her delivery. Such a membrane, besides, protuberates into the vagina, pushed out by the incumbent blood: sometimes, also, it projects out from the vulva.

Ruyfch^g performed a cure upon a girl, who had been for many months valetudinary from a suppression of the menses, and complained frequently of intolerable pain and weight about the bottom of her belly, only by cutting through a sort of membranous substance, situated behind the hymen, which blocked up the whole passage completely. Here the incision was no sooner made, than he was surprised to see the blood rush out with mighty force, to the quantity of four pints or thereabouts, noways coagulated, far less putrefied, and only of a very blackish colour. We read of another case^h, where a young woman, about twenty-six years of age, never having had her menses, complained of a swelling and great pains in her lower belly, both which received an additional increase every three or four weeks, till at last a tumour appeared in the vulva, which some took for a rupture, others for a prolapsus uteri. Sannié, a very dexterous and skilful surgeon, having carefully examined all the parts, found plainly from his touch, that a liquid was collected behind this membrane; which he had no sooner pierced with a lancet, than immediately a vast quantity of blood impetuously rushed out. The membrane resembled parchment in thickness, and felt no pain in the cutting: upon examining the os uteri, after the evacuation of the blood, he found it placed higher up than is usual in women who never have born children; but every thing else was right, and according to nature. The woman was completely cured; and in a little time her menses flowed regular-

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^f Astruc traite des maladies des femmes. Tom. I. p. 258.

^g Observat. Anatom. Chirurg. Centur. obs. 32. p. 31.

^h Holl. Maatschap. et Haerlem, Tom. V. p. 424, & seq.

ly at proper periods, and in sufficient quantity: she was married afterwards, had children, and continued to live in very good health. The blood, however, which in this case came away upon cutting the membrane, was of an extreme good colour, very fluid, and had no rank steam: on standing in the vessel, it began to rarefy and ferment, so as to run over the edge, although at first it hardly reached within three inches of the brim. Many other cases of the same disorder this surgeon had managed; but in none had he met with a membrane so thick, or the vagina so completely shut up.

There may also happen such a *tightness* of the vagina, that the menstrual blood cannot either get out at all, or at least must pass with great difficulty; whence thickening, and turning grumous in so narrow an outlet, it blocks up the entry still more and more. In this case, recourse must be had to art, in order to dilate the vagina; a pretty extraordinary instance of which we read of a woman, whose vagina, through its whole length, was so strait, as not to be able, without much difficulty, to admit a writing-quill of an ordinary size; whence a marriage she had contracted three years before, as it could not be consummated, was, by the laws, declared to be void; and now the time, limited by the statute, was very near being elapsed. No reason could be assigned for this narrowness of the vagina; and moreover it appeared, at the same time, to have a sort of a callous hardness. The ingenious Benevoli, for some days, having applied emollient fomentations to the parts, introduced afterwards, thro' the whole length of the vagina, a pessary made of gentian root, (which surgeons sometimes use in dilating the orifices of fistulas); gradually, however, enlarging it, till one of the size of that inner substance, which is contained within the Turkish wheat, could be easily admitted. A pessary, accordingly, made of this substance, swelling with the afflux of the surrounding humours, enlarged the dilatation considerably; and the thickness of these pessaries was increased from

from time to time successively: at last sponge, prepared in a convenient manner, was employed for the same purposes, which makes a very strong dilatation; injecting at the same time some vinum myrrhatum, in order to heal any excoriations that might, perhaps, be occasioned from the stretching of the pessaries in dilatation. As she was returning home to her own country, he advised her frequently to repeat the use of the sponge, in order to preserve the same degree of dilatation. After some considerable time, she discontinued, at last, the use of the sponge; and acquainted Benevoli, by letter, that what she had long hoped for was at last obtained.

We read of a similar case in the Transactions of the Academy at Paris^k. A woman, who had been married at sixteen years of age, was so strait in the vagina, that she could hardly admit a common goose-quill. At the time of her menses, which came away in very small quantity, she was sensible of a stretching pain about the uterus; whence it was thought, that the vagina was still tighter towards that part, than at the exterior orifice of the pudendum. All the attempts of the husband to open the passage, though he was both young and vigorous, proved fruitless and vain. The surgeon had given it as his opinion, that nothing could be done. In about eleven years afterwards, she found herself with child, notwithstanding the vagina continued still as tight and strait as ever. All had the most fearful apprehensions about her future delivery. About the fifth month of her pregnancy, however, the vagina of itself began to dilate; and towards the end of her term, and near the time of delivery, it acquired a proper capacity and largeness, and the woman was laid with the utmost safety imaginable.

These two cases shew what great caution and prudence is necessary, before we can determine how far the consummation of a marriage is impossible on account of the straitness of the parts of generation in a woman.

§. 1291. **B**UT when a retention of the menses arises from a stagnation of the blood, their return may be procured, 1. By bathing and rubbing the feet. 2. By bleeding in the foot. 3. By uterine purgatives. 4. By emmenagogues. 5. By plasters, fomentations, liniments, and steams, externally applied. 6. By strengthening the vessels weakened by the plethora, with chalybeate and astringent medicines.

We have now to consider those remedies, by which the menstrual flux, when suppressed from any distempered cause, may be again restored to its usual period. But as we have already seen, not only that in different countries they flow at different times of life, but also that in the same country, nay, even in the same family, there is frequently observed a remarkable difference; hence there is the greatest caution necessary, not to disturb the health by untimely remedies, before the uterus be, as yet, rightly prepared for a proper discharge of menstrual blood: that this, however, is the work of nature, not of art, we have above demonstrated at sufficient length. But even where the least uncertainty concerning this takes place, it cannot by any means be proper to administer any other but the most emollient remedies; such, for example, as may render the blood more fluid, and dispose the vessels to an easy dilatation: for to urge on, and increase the motion of the blood, by hot stimulating remedies, which are commonly reckoned in the class of emmenagogues, before the passages are as yet rightly prepared, may surely be attended with considerable danger. Several times I have seen a spitting of blood, and violent hæmorrhages at the nose, follow when these stimulating sharp emmenagogues have been imprudently given to girls, by silly women, on observing the first signs of puberty; and from that circumstance it has frequently happened, that not till after a great length of time, and with much difficulty, a due discharge of the menses could be obtained by the proper places.

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Another thing to be remarked here is, that the menstrual flux is an evacuation of red blood; and therefore supposes such a quantity to be in the body, as may suffer some diminution, without any injury to its health. The menses are frequently deficient in girls labouring under a chlorosis, commonly called the green-sickness, in whom there is but very little red blood: from such, if the smallest quantity of that which remains, be taken away by venæsection, they will become still more languid and disordered, and hence the cure be rendered so much the more difficult. Strength and firmness, therefore, must be first restored to their vessels and viscera, in order to procure good blood from the aliment they take down, before we can hope to bring away the menses in any sort of regularity. In what manner however, and by what remedies, this is to be obtained, has been formerly said at §. 28, 47; and some things shall be still farther added, at the sixth article of this paragraph.

When, therefore, the lips, gums, and eyes, look pale; the parts under the eyes are lax, blown up, and swelled; the whole body is soft, cold, and flabby, and girls on the least motion are out of breath; when they are dull, languid, cold, and, as it were, indifferent to every thing; emmenagogues must not be thought of, till such time as the health is restored by a proper method of cure: but if there is a lively florid colour in the countenance, an equable heat all over the body, and the other signs, formerly mentioned, appear, which all shew the uterine vessels to be pressed, though not as yet inclining to yield; then the remedies may take place, which are recommended in this paragraph.

The liquid, however, may either stagnate, or begin to stagnate, in the distended vessels of the uterus, either on account of its thickness and want of fluidity, or because the vessels resist too much the requisite dilatation, or even both these defects may sometimes concur. Then physicians, in this case, may prudently venture upon the following.

1. The remedies under this article have been formerly mentioned in the chapter on obstruction; where,
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at the same time, we discoursed of such things as were powerful in deriving, attracting, or propelling. As the feet and legs, however, receive their vessels from the external iliacs; and as the uterus, too, not only takes its vessels from the hypogastric, but also from the same external iliacs, there being a communication between them by various anastomoses, (as may be seen from Eustachius's¹ tables); it is easily seen on what account, when the vessels of the feet are relaxed by bathing, and the motion again is accelerated by friction in the same parts, a greater quantity of blood will be derived towards the aorta, where it divides into the iliacs, and so cause a greater pressure upon the vessels of the uterus, from which there may be hopes of dilating their extremities, so as to allow the menstrual flux to come away.

At the same time we must remark, what is to be observed by all conversant in practice, that warmth in the feet is of particular service at the time of menstruation; but cold, on the contrary, very injurious; nay, sometimes by this the menses have been all of a sudden suppressed, which I have frequently had occasion to see, especially when the persons have remained long on their feet, in a cold marble pavement: for usually, from this very cause alone, there arise spasmodic contractions of the intestines, occasioning the most troublesome colic pains; which are vastly relieved when the feet are warmed again, and especially by rubbing: for all the viscera of the abdomen are very badly affected, when the feet are intensely cold; and therefore it is no wonder, likewise, from a contraction of the vessels, to see the menstrual flux suppressed.

Bathings, therefore, and frictions of the feet, are of service in driving off the cold, and recalling and increasing the heat in the lower extremities of the body, as they accelerate the motion of the blood, and derive, at the same time, a greater quantity of humours into the feet and legs. But seeing the lower extremities receive their blood from the external iliac

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arteries, but the uterus chiefly from the hypogastric, hence it will probably follow, that the more the vessels of the feet and legs are filled and tumefied, so much less pressure will the uterine vessels have to sustain: and therefore, if by increasing the motion of the blood through the iliac arteries by friction, after the application of warm baths and fomentations to the feet, the passage of the blood through the crural artery shall be in some measure obstructed or lessened, the force and quantity of the blood moving through the uterine vessels may suddenly be increased, and so the obstacles may be removed, which could not be subdued by other means.

We have a pretty enough instance of such a method in the following extract^m. Doctor Archibald Hamilton, an ingenious physician at Edinburgh, was called to a young woman about twenty years of age, whose menses, for near seven months, had been suppressed: the cause had been owing originally to her exposing herself imprudently to the cold during the time of menstruation. Before this, she had enjoyed very good health. She had applied to no physician for advice; but had only taken a few remedies, recommended to her by the women, without any sort of relief. Her colour began to grow paler; her appetite and digestion were quite depraved; she had a languor, nausea, and inclination to vomit, a slow and feeble pulse, and a great weariness which kept her from exercising her body as usual: she never had any disorder, however, in her breast, nor pain or swelling about the pudenda.

Twelve days before the usual period of her menses, every day in the evening, she sat with the parts exposed to the steams of warm water: on the tenth day she had an aloetic purgative, which gave her four loose stools. Next day, about seven o'clock in the evening, a linen compress was applied to the crural artery in that place where the tourniquet is usually applied in extirpating the femur: this compress was pressed by a bandage carried round the thigh, but not so tight as to occasion a mortification by hindering an

VOL. XIII.

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^m Essays and Observat. Phys. and Liter. Vol. II. p. 403. et seq.

influx of the arterial blood into the parts below : at the same time, also, the patient was set upon the steams of warm water.

It was the doctor's intention to remain close beside her, carefully to observe the consequent effects; but being called away suddenly to another patient, he was gone about twenty minutes, when, upon his return, he found the pulse somewhat quicker: half an hour after, she began to feel a weight and fulness about the region of the uterus, and grew a little faintish; but as she perceived no uneasiness in her head or breast, the bandage was continued, and a spoonful of cordial mixture was given her. An hour and a half after the first application of the bandage and compress, the menses began to flow: but as her feet grew a little benumbed, the bandage was loosened a little; however, the compress was not removed till next morning, when her menses went on to flow without any uneasiness, and continued for two whole days together: afterwards her menses came away at the usual periods, and she grew perfectly well.

It is probable *Ægineta*ⁿ had such an indication in his eye, when he desires the inferior parts to be bound up pretty tight, for three or four days immediately before the approach of the monthly period; and when the time of menstruation was come, to loose the ligatures, and administer myrrh, castor, and other emmenagogues. In the chapter following, indeed^o, he recommends ligatures, to check the too great a flow of blood from the uterus, but not upon the inferior limbs only, but also about the arm-pits and groins. His intention was, perhaps, to have a softer compression by bandage, and by pressing upon the veins to hinder so great a quantity of blood from returning to the heart, which, as hath already been frequently observed, is of great use in removing hæmorrhages. But, in order to provoke the menses, he advises to bandage the inferior parts only; nor could the constriction be very great, seeing the ligatures were to remain three or four days. Now the capacity of the veins, in the inferior extre-

mities,

ⁿ Lib. iii. cap. 61. p. 52. versa.

^o Ibid.

mities, being lessened with the bandages, the external iliac arteries could not so easily empty their blood into the veins now full and turgid; whence the uterine vessels must be more strongly pressed the whole time in which the bandages continued upon the parts.

2. Seeing that, in a suppression of the menses, all that blood may be retained which at every period used to be evacuated, the quantity of course will be increased; and so much the more indeed as the quantity is larger which usually goes out by the uterine vessels: for, as we have said before, there is a great variety, with respect to this, to be observed in different women. Opening of a vein, therefore, must be of considerable service to lessen a plethora occasioned from a retention of the menses; whence, also, in a more advanced age, when they are about to cease altogether, many advise bleeding, and that indeed to be frequently repeated. Yet this does not appear universally proper in every case of this nature; for if the menstrual flux lessens gradually in quantity, and the intervals of the periods are lengthened, and no signs of a plethora appear, then there is no need of bleeding; for there is no suppression of the menses, but only a natural cessation, which by no means ought to be disturbed. But if, towards the fortieth year, the menses, which hitherto had preserved an accustomed period, are suppressed, for instance, by any violent affection of the mind; if there is an obtuse stretching pain about the loins, the groins, or pubes; in that case, bleeding must do service.

But to make venesection necessary in a suppression of the menses, all the signs of a plethora ought to be present: for if the menses are defective from a scarcity of good blood in bodies exhausted by former diseases, repletion, not evacuation is then necessary. Nor even, when the plethora itself shall have degenerated into a cacohymia, is it then always requisite to bleed; but rather to take some other evacuant remedies, which, without lessening the quantity of good blood, may draw away the vicious humours out of the body, or change them, so as to acquire again the nature and

disposition of the sound humours; more, concerning which, shall be said at the sixth article of this paragraph. Manningham has made the following remarks^P: “A dropfy in the belly, for the most, arises from the menses being for the greatest part, or altogether, obstructed.” If a dropfy then is once formed from this cause, an evacuation, by bleeding, must be very prejudicial, though it may sometimes be of very great service in the suppression of the menses itself, which was the original cause of that dropfy. Helmont^Q has very well remarked this in the place already cited, where, treating of this matter, he says, “For first of all it abounds, though good, to excess; then it overloads by this superfluity; afterwards it loses all its life and spirit; and last of all becomes a slow poison.” Whence he concludes, “Therefore it is wrong of the schools, officiously to pretend to give relief by venesection to girls, whose menses are defective in part, and who complain of palpitation: for although a revulsion of the menses in one degree of deficiency may allay these palpitations, yet let me tell our arch doctors of physick, that such a remedy, in menses of three degrees, will prove very pernicious.” He even adds, that he had seen young girls taken off suddenly by bleeding, where he had given his positive advice against it.

In the beginning, therefore, bleeding may be serviceable in taking off the plethora; but at a later period, when it is degenerated into a cacochymia, it is not to be attempted, except with the greatest caution. and the advice Celsus gives with regard to bleeding^R, which we mentioned on another occasion, at §. 890, n^o 1. may here take place; to wit, “That it must be entirely useless, when either the matter is now, through length of time, itself exhausted, or corrupts the body, so that an evacuation of this kind may render it weaker, but can never restore it to soundness.”

To lessen the quantity of good blood, it is sufficient
to,

^P Artis Obstetr. Compend. p. 50. ^Q In capitulo, *Lunare Tributum*, p. 584. col. 2. ^R Lib. ii. cap. 10. p. 80.

to open a vein any where in the body; but yet we see almost all physicians advise venæsection, in this case, to be performed in the feet. Galen has absolutely insisted upon it: *For as for fulnesses arising from suppressed menses, you must evacuate them solely by the legs, whether it is done by opening a vein, or by scarification; for, in women, bleeding at the arm usually diverts the menstrual courses*^s. In these, at the same time, he advises not to delay the evacuation; and if their veins are small, he prefers scarifications, which he observes are also powerful in bringing down the menses. The same thing is affirmed by Oribasius^t, who recommends scarification in a suppression of the menses: “But it is necessary to wait till the usual period of purification: in proportion as little or nothing shall come away, so we are to have recourse to this evacuating remedy, according as it may be thought necessary.” He seems however, by this, to point out, that he would only have such a quantity of blood taken away by the scarifications, as that, after the suppression being taken off or greatly lessened, there might remain still a superfluous quantity of blood in the body to answer the purposes of the menses. But the use of scarifications, in promoting the menstrual discharge, is shewn from what immediately follows: “With some particular women this remedy will greatly contribute to make the menstrual purgations return in their usual manner; for drawing down the blood continually towards the lower extremities, gives it a tendency and opportunity to come that way.”

Since the circulation of the blood has been known, the utility of bleeding in the feet, to bring down the menses, is more clearly understood; and though not indeed in every suppression of the menses, yet it is of great service in very many cases. If a tension and sense of weight be felt about the pubes and groins, and a pain about the loins, at the time of the menstrual

B. b 3.

period,

^s Nam plenitudines, a suppressis mensibus ortas, omnino per crura evacuabis, sive venam secare oportet, sive scarificare: sectæ enim in cubito venæ mulierum revellere, purgationem assolent. *De Curand. Rat. per Vengest. cap. 11. Charter. Tom. X. p. 440.*

^t De Cucurbit. Scarificat. Hirudin. &c. cap. 20. Ibid. p. 452.

period, we know that the uterine vessels are quite full and distended, though the extremities of the arteries, opening into the cavity of the uterus, may not, at the same time, be sufficiently dilated to allow the distending blood to pass. Should these vessels then, after warm bathing, particularly by way of steam, be relaxed, and the motion through the repleted vessels be at one and the same time increased, there are hopes of getting so far the better of that resistance towards their extremities, as to procure an easy discharge of the menses, and of course a relief to all these troublesome complaints. In the first article of this paragraph was mentioned a compression being made on the crural arteries; and with this view indeed, that the blood, moving through the iliac arteries, not being able to pass freely by the crural, might press the stronger for admittance through the uterine vessels, and thus surmount the resistance towards their extremities: but by opening a vein in the foot, the motion of the blood through the crural artery, of that side where the vein was struck, is rendered quicker and freer, and of course a considerable pressure taken off the uterine vessels; whence some have concluded, that bleeding in the feet lessens indeed the quantity of blood, but in other respects rather is hurtful, than of service, in bringing away suppressed menses.

It must however be considered (see §. 106, n° 8.) that by the plethora itself the larger vessels come to be distended, the secretions through the smaller vessels altered, the veins compressed, the extreme orifices of the smaller arteries shut up by the swelling of the larger branches: hence a free circulation is hindered and choaked up. Whilst the uterine vessels then are thus distended, they are unable to contract themselves, or to send forward the blood contained within them; whence every thing here begins to tend towards stagnation. So soon as a vein is once opened in the foot, the blood will be thrown more quickly and in larger quantity into the crural artery, and the uterine vessels will not be so much pressed nor so much distended: hence the arteries will begin to contract themselves,

selves, and send forward the blood into the veins, which may now empty themselves freely into the iliac vessels, being at this time not so much distended: hence a free circulation, through the substance of the uterus, will return; the furthest extremities of the arteries will be easily dilated; and the menstrual flux, before suppressed, will now be restored, whether owing (as we said before at §. 1284.) to a plethora of the whole body, or to that of the uterus alone.

It is very well known, that in very plethoric people the motion of the blood is almost entirely stopped; whence, from the blood-vessels being so turgid, they appear dull, absent, and sluggish. As soon as this plenitude is taken off by a large bleeding, the motion through the vessels is restored; the pulse, before suppressed, becomes stronger and quicker; the body, shaking off the sluggishness, acquires a sudden briskness and vigour; and the circulation of humours through all the vessels is restored. If this reasoning is applied to the uterus, distended in its vessels by the accumulated blood which cannot get forward by their extremities, the reason of that benefit, which in such a case we may expect from bleeding at the feet, will more evidently appear.

3. If the menses are suppressed from a plethora of the whole body; then, after bleeding, the purgatives called *antiphlogistic*, which dissolve and evacuate the humours without increasing the circulatory motion, may be very serviceable; such as are prepared, for example, of tamarinds, leaves of senna, cream and crystals of tartar, &c. whose uses, in the cure of acute distempers, we have formerly taken notice of.

But the uterine purgatives, which are for the most part so called, are such as, together with their cathartic virtues, dissolve every thing tough and viscid, by attenuating and warming, supplying the want of bile, or correcting its inactivity. These, however, principally take place, when girls, after a suppression of the menses, incline towards a bad, viscid, cold, and sluggish habit of body, or even where the menses are deficient from this bad habit of body. The

primæ viæ, at this time, are usually loaded with a filthy viscid matter, which ought first to be dissolved, and then expelled out of the body; and it is usual, for the most part, before-hand to administer the remedies recommended in the first article of this paragraph. Hippocrates advises, *That if the menses do not come away at all, being through disease rendered thick, tough, and glutinous, it is then, in a particular manner, necessary to purge the belly both upwards and downwards*^u. For there are even hopes, from the very shock itself given to the body by such medicines, that the menstrual flux may be promoted; while, at the same time, all that is tough and glutinous may be entirely thrown out. Elsewhere^w, likewise, he advises, after the application of warm steams to the uterus, to purge the belly downwards; taking care, however, not to raise a hypercatharsis, which may occasion weakness from too great an evacuation.

For this reason, in the *Materia Medica*, among the uterine purgatives of this class are reckoned myrrh, gum ammoniac, bdellium, &c. which move the belly only gently, requiring even a larger dose to have that effect; whilst, at the same time, their aromatic flavour, so friendly to the nerves, fills the whole course of the first passages, dissolving those flatulencies frequently so troublesome in such cases, and rousing the languid action of those viscera by a grateful, and yet not too heating stimulus.

Aloes has obtained the first place amongst almost all uterine purges, which, at the same time that it purges the belly, all physicians agree, strengthens the stomach. Whence Celsus, recounting the purgative remedies, says, *But purges are in danger of hurting the stomach; and therefore aloes should be mixed with all cathartics*^x. This medicine in a lesser dose, and frequently given in the quantity of three or four grains, or

^u Si vero menses omnino non prodeunt, pro morbo crassi, lenti, et glutinosi redduntur; imprimis igitur ventrem sursum ac deorsum purgare oportet. *De Mulier. Morb. lib. i. cap. 6. Charter. Tom. Vnn. p. 732.*

^w De Locis in Homine, cap. 18. *ibid.* p. 327.

^x Sed medicamenta stomachum fere lædunt; ideoque omnibus catharticis aloë miscenda est. *Lib. ii. cap. 12. p. 84.*

or mixed with the aromatic gums just now mentioned, is of excellent efficacy in a suppression of the menses, as also when a customary evacuation of blood by the hæmorrhoids happens to be stopped. Aloes enter the composition of every elixir called *Elixir proprietatis*, which, with the addition of saffron, myrrh, and sometimes other ingredients, are always to be met with in the shops. A composition, similar to these, called *massa pilularum Ruffi*, Ruffus's pill, is every where in use, and is chiefly made up of aloes, saffron, and myrrh; whence it is called by some, *dry elixir proprietatis*. All these are usually administered in such a dose, as may only purge the belly gently, without weakening the strength of the bowels.

It may seem strange, perhaps, that bryony and colocynth, which are justly reckoned among the roughest purges, should be numbered in the class of uterine purgatives; but these are added only in small doses to the milder uterine medicines, or given in such proportions as cannot do any harm. Thus the white sediment procured from the juice of bryony, recommended by some physicians, I have given to the quantity of thirty grains, which has been only followed by one loose stool. The bryony root is an ingredient in what are called *hysteric waters* in some dispensatories. But these are either prepared by distillation; and then, the bitter and purgative quality remaining in the extract, the spirituous liquor, which comes over by the alembic, may be taken without danger: or, if this medicine is prepared by infusion alone, then it is only administered in drops, that the dissolving power of this plant, so much recommended, may take effect without purging the belly; in which it is so very powerful, when taken in a sufficient quantity, that only the strongest and robust constitutions are able to bear it. So, in the Vienna dispensatory, there is also a distilled compound bryony water, from the juice of bryony root, mug-wort, rue, favin, and other uterine medicines, with the addition of strong wine; which may be very safely taken, without danger of purging.

The same is true of the bitterest colocynth; which,
whilst

whilst it is powdering in the shops, purges sometimes the bystanders, if they continue any time in the atmosphere where it flies about. Sometimes also it is mixed with ointments, and applied to the belly, in order to procure a stool. The Arabian physicians frequently administered colocynth; but they made up the powder into a mass with gum tragacanth, which afterwards was formed into round pieces, and kept in the shops under the name of Trochisci Alhandal: by this soft mucilage they endeavoured to correct the so-much-apprehended acrimony and roughness of the colocynth. Sometimes they ordered these troches to be again reduced into powder, and made up once more with gum Arabic; nay, they frequently repeated this for three times successively.

At present the colocynth is seldom administered as a purge by itself alone; but is usually added to other purgatives, in the quantity of a grain or two, to quicken their operation, especially in persons whose bellies are very difficult to be wrought upon by cathartic medicines: for which reason it enters into several purgative compositions of the shops, such as confectio hamech, extractum catholicum, pilulæ cochixæ, &c.

But as the rougher purging medicines cannot, with prudence or safety, be administered to tender girls, it is evident that colocynth can hardly deserve to be reckoned amongst uterine purges.

Yet this medicine has another peculiar advantage attending it; and that is, if the eighth part of a grain is given every three or four hours, then it does not purge; but, in languid phlegmatic habits, is of wonderful efficacy to increase the heat and motion by a gentle stimulus: it may be very fitly administered by mixing a little of the powder with myrrh, galbanum, or any other which stands recommended under this class. There was formerly a secret medicine sold about, which was nothing else but tincture of colocynth prepared with spirit of wine, with the addition of some cloves to disguise it, from which it was called the Golden Tincture, and was of service to many, where, for instance, a cold, phlegmatic, bad habit of body had occasioned

caused a suppression of the menstrual flux.

4. The term *emmenagogue* is used in a very general way, and does not in all respects agree to medicines classed under this denomination; whence there is great caution and nicety here requisite in making a proper choice. Most of the medicines which are recommended as such are warm and aromatic; some of which are not to be taken but with the utmost caution. *Marum* is of a very fragrant aromatic flavour, but so very hot as to affect the nostrils with a heat almost resembling a burning coal: hence, in persons of a plethoric habit, or in young women of a warm constitution, it may do a great deal of harm: in colder constitutions, indeed, it may be of greater service; but the plant ought to be infused in a good quantity of water, to dilute that aromatic acrimony. *Savin*, of all the plants almost that are known, yields the greatest quantity of a pretty acrid aromatic essential oil; so that Hoffman^y, by distilling this herb with water, *per vesicam*, as they say, could, from every pound of the plant, procure very near three ounces of oil; at least, from two pounds, if the distillation was rightly managed, he could obtain five ounces of the oil. From other observations it likewise appears, that if a little of the infusion, or decoction, of the savin plant, shall be mixed with some blood recently drawn, it gives it a brighter red colour, and a greater degree of fluidity^z. But seeing the spicy part of the plant lies concentrated in the distilled oil, we may easily imagine what a stimulus from savin may be applied to the body, when at the same time it is endowed with a power of dissolving the blood. Worthless, abandoned women, sometimes make a wicked use of this plant and its distilled oil, in order to procure abortion: hence in some places it is by law forbidden to give or sell either the plant, distilled water, or the essential oil, to any one, unless when prescribed by a physician. Pretty similar to this plant, in flavour, taste, and medicinal virtues, is the *thuya*, a small shrubby plant, and, in like manner an ever-green. *Artemisia, cardiaca*, are milder, and of much

^y Observ. Physic. Chem. p. 8. ^z Schwencke Hæmatolog. p. 187.

much less efficacy: even the *elder-flowers* breathe a grateful fragrance, but are rather cooling in their nature; whence, in hot inflammatory distempers, they are frequently used both externally and internally. As to the rest of the medicines ranked under this class in the *Materia Medica*, they are of an aromatic nature indeed, but yet by no means to be compared to these very hot ones just now mentioned.

Whence it is very evident, that emmenagogues, so much recommended, are not to be given indiscriminately, but must be left to the physician's prudence to consider, in each case, which may be administered with the greatest safety and advantage; and, in a suppression of the menses, if the physical indications should make it necessary to employ remedies of a forcing nature, his discretion will lead him to begin with the gentler sort at first, gradually advancing to those of a more acrid stimulating nature. It would seem still more eligible, if, together with these warmer medicines, things of a mild, watery, softening nature were given, such as have been recommended at §. 75. when we spoke of the cure of diseases arising from a spontaneous viscosity. This also seems to have been the intention of the celebrated author of these Aphorisms, when in his *Materia Medica* he recommends the stimulating medicines which were advised at §. 75, n^o 5; but, at the same time, subjoins to them such as were recounted at §. 54, n^o 4. where, in the cure of rigid viscera he recommends and enumerates medicines that are of a thin, lenient, and soothing nature.

We may also trace out some footsteps of this method of practice in Hippocrates; for he recommends acrid medicines, but at the same time conjoins them with things of an emollient nature^a: *In the menses, if the blood come away (it is very well): but if not, let her drink, in a little wine, four cantharides, with their head,*

^a In mensibus autem, si quidem sanguis erumpat (satis est); sin minus, cantharides quatuor, resectis pedibus, alis, et capite, b bat, pœoniæque nigræ grana quinque, et sepia ova, linique semen, ex vino. Quod si dolor, sique stranguria, detinuerit, in aqua calida desideat, et aquam mulsam aquosam bibat. *De Natur. Mulier. cap. 8. Charter. Tom. VII. p. 685.*

head, wings, and feet, cut off, five grains of black peony, the eggs of the sepia, and some lint-seed. But, if she is seized with pain, or strangury, let her sit above the streams of warm water, and drink a good deal of thin drink of water and honey. Nay, should the menses not even then come away, he is for having the same things repeated; and desires, that, “during her purgation, she eat of the herb mercury, and make use of boiled polypuses along with other soft meats.” Much the same he mentions in another place^b, where he orders an application, made up with cantharides, to be put to the uterus, which, however, is to be appointed the day following with some goose-grease; and a little after he recommends it to be washed with something warm twice a-day.

From these and many other places in Galen and the other ancient physicians, we find it is no new thing to make use of acrid remedies in the cure of a suppression of the menses; but at the same time it is abundantly certain, that both in the regimen and diet, as well as in the cure, they strictly recommended soft, diluent, and soothing drinks to be taken along with them.

When the power of electricity began to be employed in the cure of diseases, the menstrual flux was, from that wonderful power, observed to be considerably increased, and to flow in greater abundance than at any time before; nay, both before the approach of the periods, and after they were gone off, a woman has been known to get a fluor albus, which she never had, on any former occasion, experienced in her life^c. But the electrical shock, like thunder, penetrates every thing instantaneously: hence the vessels are opened, and the motion of the humours is in a moment quickly increased.

But seeing the liquids may also stagnate in the vessels from too great a degree of viscosity, very eminent physicians have therefore placed great confidence in such remedies, as, besides their stimulating qualities, were also possessed of a power of attenuating and dissolving.

VOL. XIII.

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solving.

^b Ibid. cap. 18. p. 689.^c De Haen Rat. Medend, parteiii. p. 241.

solving. The celebrated Mead^d, with this view, advises, among other things, mercury six times sublimated; but, above all the rest, he recommends the black hellebore, which, he says, he hardly ever remembered to have failed. As to the quantity, he usually gave a tea-spoonful of the tincture of black hellebore twice a-day in a little warm water: “ And he
 “ observed, what indeed is very remarkable, that as
 “ oft as this medicine, either on account of the wrong
 “ conformation of the parts, or from any other cause
 “ whatsoever, had been given without having its proper effect, the blood was sure to be propelled through
 “ some other passages: whence it appears, in a very
 “ conspicuous manner, with what a mighty power
 “ this remedy is possessed of attenuating and propelling the blood.”

Different authors have recommended different remedies; but they are almost always of such a kind as act either by increasing the motion of the humours, or by their dissolving power, or both these united together. But if the expulsive powers are roused up into action by these stimulating remedies, before the liquid, which is to pass out, is properly attenuated for that purpose, or the emissaries by which it is to go be sufficiently pervious, all the complaints will be exasperated from the use of warm emmenagogues, and sometimes very dangerous hæmorrhages arise in different parts of the body, from the vessels of the uterus continuing to be so obstinately constricted. Whence that salutary admonition of Hippocrates, which was mentioned on another occasion, at §. 605, n^o 13. with singular propriety takes place here: “ That if any one
 “ has a mind to purge the body, he ought, first of all,
 “ to reduce the matter to be expelled to such a consistence as easily to pass out.” The ancient physicians were very careful in this particular, and used every means to dispose the vessels to an easier dilatation, before they ever attempted to give the warm emmenagogues; or at least joined emollients along with

^d Monita et Precepta Medica p. 246, 247.
 Charter. Tom. IX. p. 38.

^e Aphor. 22. sect. 1.

with them, as will evidently appear in the article following.

5. How much benefit Hippocrates expected, from a disposition in the vessels towards an easy dilatation, in promoting the menses, may appear from hence, that he advises young virgins to marry, and, should they conceive afterwards, assures them of perfect health. It is very well known, that the uterine vessels, during the time of gestation, gradually dilate so much, that those shall acquire the largeness of a goose-quill, and even exceed it, which before pregnancy were hardly obvious to the naked eye: whence it so often happens, that after child-bearing the menses return in much greater quantity, as the vessels so much distended during gestation may not as yet have regained their former tone and firmness. Hippocrates recounts several troublesome symptoms^f that are apt to affect virgins come to maturity. “When the blood runs towards
“the uterus with an effort to get out, yet is denied a
“passage;” then he says, “Such virgins as are affected in this manner, I strictly enjoin to get themselves joined to a husband as soon as possible; for
“if they happen to conceive, their health will quickly
“be restored.” It has been observed, what we shall afterward take notice of in the diseases of pregnant women, that in the bodies of animals dissected immediately after coition, there appears something like a slight inflammation upon the uterus, as the parts look red,^g which formerly used to be of a palish colour; and therefore the vessels must be more considerably distended, seeing they had given admission to the red particles of the blood. In another place, after advising various things to take off a suppression of the menses, he adds last of all^g, “She will, however, be freed
“from the disorder whenever she conceives.” But still greater effects he expected from bringing forth a child: *As to womens disorders, my opinion is this; that a woman, who never has brought forth a child, shall be sooner and more grievously afflicted from the menses than*

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she

^f De Virginitum Affectionibus, Charter. Tom. VII. p. 679, 680.

^g De Natur. Mulieb. cap. 8. ibid. p. 685.

She who has experienced child-bearing ; for after having been once delivered at her full time, the little vessels become more pervious to the menses. They are made permeable too by the flowing of the lochia, which is a kind of purgation, &c. Things therefore being constituted in this manner, a woman, having once experienced the cleansing after child-bearing, will have less difficulty and trouble in her future menstruations^h. Nay, farther, as those vessels, which during gestation had undergone so great a degree of dilatation, may afterwards be more easily distended; a woman, who has once been a mother, will even feel less pain from a retention of the menses. But should any disorder arise in a woman who has once been fruitful, by which the approaching menses are hindered from coming properly away, this woman shall bear the inconvenience and trouble better than one who never has experienced child-bearing ; for the uterus is seasoned and accustomed as it were, and the whole body capable of being filled, that is, in a woman bearing children ; and there is, at the same time, a great deal of room in the body†.

But seeing it cannot suit every virgin to enter into the married state, every means of art have therefore been employed to cause the uterine vessels to yield more easily, and to send forth by their extreme orifices the blood with which they are distended. For this purpose, Hippocrates has been at very great pains to recommend the cherishing these parts by gentle heat and moisture. Thus he orders the uterus, and parts adjacent, to be fomented with warm water ; and these, together with the legs, to be pretty well warmed,

^h De mulierum morbis sic enuncio ; mulierem quæ non peperit, gravius et celerius a mensibus, quam partum expertam, ægrotare : quum enim peperit, ei venulæ ad menstrua sunt meabiliores (ενρωσιτερα τα φλεβια). Meabiles autem ipsas faciunt lochia, quæ purgatio quædam est, &c. His ita constitutis, quum mulier puerperii purgamenta experta fuerit, minus laboriose mensuris purgatur. *De Mulier. Morb. lib. i. cap. 1. ibid. p. 728, 729.*

† Quod si mulieri, quæ jam peperit, affectio aliqua oboriatur, ita ut procedentes menses rite repurgari nequeant, ea facilius, quam si haud peperisset, laborem feret. Assueti namque sunt uteri, et corpus, ut impleatur, idoneum, nimirum utero gerenti, simulque magna est in corpore amplitudo. *Ibid.*

warmed ⁱ. The whole body, and principally about the uterus ^k, he would have gently cherished, and washed twice a-day with warm water. In another place ^l, he gives orders to wash with warm water, and to sit with the whole body above it, and sometimes to foment upwards to the navel; and at intervals to apply, in place of this, something purgative and cleansing, but nothing sharp or biting. But as the rest of the body may be in good condition, when “the uterus is alone disordered;” in that case, he cherished the uterus with the steams of a warm bath, conveyed through a reed, that the rising vapour of the hot water (though it must not be too much so) may be properly conveyed into the cavity of the uterus ^m; and, at the same time that he describes the method, lays down the proper cautions necessary to be observed. He added, however, to this vapour likewise, the smell of garlic, only to stimulate gently the internal surface of the uterus, now considerably softened: for he advises not to bruise the garlic when it is to be put into the water; as garlic, we know, when bruised, throws about its flavour every where, so as to make the tears come from peoples eyes who happen to stand near it. In another place he advises ⁿ lamb-skins, with their wool, to be applied warm to the belly; and several other such remedies he recommends in different places of his writings. Many other artificial remedies to soften the vessels of the uterus, in order to promote the menstrual flux, are to be seen, as they are collected by Moschio ^o; where the cure of a retention of the menses, or when they come away with pain and strangulation, is attempted by means of bathing, fomentations, ointments, pessaries, frictions, and cupping. Pessaries, however, can hardly be proper in young virgins, lest some injury, or violence, be done to the seat of virginity. In the *Materia Medica*, under this head, are recounted plasters, fomentations, ointments, liniments, and

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steams;

ⁱ De Mulier. Morb. lib. ii. cap. 27. *ibid.* p. 816.^k *Ibid.* cap. 28.^l *Ibid.* cap. 37. p. 820.^m *Ibid.* cap. 20. p. 808.ⁿ De super-foetatione, cap. 17. *ibidem*, p. 869.^o No 126. apud. Spach. p. 11.& *ibid.* Harmon. Gynec. parte poster cap. 2. p. 20.

steams; which, by lubricating, softening, dissolving, stimulating, and warming, may be employed as they happen to be required by the different indications of cure.

6. It was said formerly, §. 25. when we were inquiring into the causes of too great debility in the solid fibres of the body, that excessive distraction of the fibres and vessels occasioned such a relaxation. But at §. 106. among the effects of a plethora, the too great dilatation of the vessels was mentioned as one: and therefore, if the vessels, on account of a suppression of the menses arising from a plethora, shall be too much distended, and there has been for some time good reason to suspect such a debility, either in the uterine vessels, or in the other vessels of the body; in that case, chalybeates and astringents may have their use, as hath been said at §. 28, n^o 4. and the more so, as the habit of body in women, by nature, is commonly of a laxer composition, whence they can bear more easily the effects of strengthening remedies. This is remarked by Hippocrates, when he says, *Women, however, necessarily require a drier kind of food: for the drier sorts of aliments are more agreeable and salutary to the delicacy and softness of female flesh; and genuine hearty liquors are by much the properest, both for the uterus, as well as for the nutrition of the foetus*^p. The truth of this remark of Hippocrates is every day seen by physicians, in those places where women indulge much in the very bad custom of drinking great quantities of warm watery infusions, especially if at the same time they are confined to a sedentary life. They are always delicate, relaxed, and unactive, hardly ever fruitful; and when they do conceive, frequently suffer abortion. The wise legislator Lycurgus, “ excised the bodies of the Spartan virgins in running, wrestling, throwing the quoit and javelin, that both the first beginnings of the foetus, having a stronger root in bodies so healthy, might grow more

^p Mulieres autem sicciorē victus ratione sic uti oportet; sicca namque cibaria ad muliebrīum carnium mollitiem magis sunt idonea, et meraciores potus ad uteros, & foetus nutritionem, meliores existunt. *De Salub. Victus. Ratione, textu 24. Charter. Tom. VI. p. 233.*

“ more vigorously, and also that they themselves, “ sustaining the offspring with so much activity and “ briskness, might encounter the pains of child-bearing with more ease and safety ^q.” Thus the legislator wisely extended his care to the future offspring, seeing that the soft and the delicate, even when joined to stout and vigorous husbands, produce but a puny, weak, and sickly progeny.

But chalybeates and strengtheners are likewise prescribed in the green-sickness, where girls have a leucophlegmatic swelling all over the body, and, in place of sound wholesome blood, a viscid inactive humour moves through the vessels: in these the menses are defective for want of good blood, and every thing in the body is depraved. Here the filings of steel, infused in wine, with other aromatic and strengthening ingredients, (an ounce of this infusion being taken three times a-day), have been known to be of remarkable service. It is usual to give a gentle purge before the use of this medicine, to clear the primæ viæ of any filthy viscosity; such as, for instance, fifteen or twenty grains of Ruffus's pill, or any other similar shop-composition, taken for three days together, in the morning, with an empty stomach. Most salutary and surprising effects have followed the use of this medicine: for in a few days the white swelling of the body subsides; the lips and gums, that before were pale, begin to look reddish; the rosy colour returns to the cheeks; and whereas, before, on the least motion of the body, they were breathless, lazy, and languid, now their former alacrity and briskness come back, and in three or four weeks all their functions are quite restored; good wholesome blood begins to appear; and soon after, the menses flow spontaneously at regular periods; provided they make use of that strength, which they have recovered by the use of this remedy, in the motion and exercise of their bodies; for when they are cured, if they should again indulge themselves in drinking large quantities of warm watery infusions, and

and in a constant sedentary way of living, they will most certainly relapse into their former disorder. It has often happened to me, that I have been obliged to repeat the same course thrice, nay, four times, in the space of one year, before they became sensible of their error, and grew more obedient to rules : which if they neglect to observe, the sluggish inactive languour will at length yield to no remedies ; and after they have dragged on a few sickly months in a state of dull stupid insensibility, sink under it, and die at last lethargic.

In such a case, these remedies are of service : bleeding again does harm, as it takes that little quantity of red blood, which still circulates through the vessels, away from the body. But when a redness appears in the lips, gums, and corners of the eyes, with a fulness of the veins, and a warmth all over the body, and the menstrual flux shall at the same time be suppressed, in that case such medicated steel wines must assuredly do harm ; for then there is plenty of red blood, rather too much indeed ; and therefore bleeding in the feet, warm bathing, and fomentations, &c. which relax the vessels of the uterus and take off their resistance, may be highly proper. See also what hath been said at §. 1083. concerning the cure of an epilepsy arising from an interception of some customary excretion.

From all which it is plain, that the greatest prudence and caution are required, in making a proper choice and use of emmenagogues.

There is a formula of this medicated wine in the *Materia Medica* at §. 1250. In the mean time, I believe, it is necessary to take notice, that the quantity of wine is rather too small : in place of two pints of Rhenish wine, six may be taken, lest the medicine be too strong : and when this is done, it will be still sufficient to give only one ounce three times a-day ; for it is safer to give it in a smaller dose, especially as it is to be taken constantly for some time.

§. 1292. **H**AVING by these means removed the cause of the disorder, almost all

all the bad symptoms enumerated at §. 1285, to 1287, disappear of course; or they are cured in the same manner with the disease they most resemble, which may be easily performed by attending to the rules already laid down.

At the numbers quoted in the text, were recounted several bad symptoms, which, it was observed, took their rise from a suppression of the menses. Most of these, when the menstrual flux returns in due quantity, and at the accustomed period, usually disappear of themselves. But it was also at the same time remarked, that, from that very cause, almost all the natural, vital, and animal functions might be depraved: if, therefore, the menses have been long obstructed, there may afterwards remain several troublesome symptoms, which require a particular management, even though the menstrual flux should return at regular periods; so in like manner, when the menstrual blood goes from the body by unusual and extraordinary outlets, there may remain a weakness of the vessels belonging to those places by which it went out, even after it has begun to flow regularly, according to nature, by the vessels of the uterus. But from what was said at §. 1287, it appeared that all the viscera might be weakened from this very cause; whence may arise, as well from the different injuries done to the vessels, as the various degrees of depravation of the humours, an endless complication of disorders, which may remain after the restoration of the menstrual flux, and require to be cured, which is frequently very difficult to accomplish. It would be superfluous here to dwell upon the cure of all these disorders, seeing most of them have been already handled in former paragraphs: but they may be all conveniently reduced to the nature and cure of those disorders to which they bear the nearest resemblance.

Thus, for example, it was said at §. 1286. that the menses, when intercepted, were sometimes carried to the lungs, and there gave rise to a hæmoptoë or spitting of blood. Should the lungs, from thence, have

contracted any ill disorder, it is plain, recourse must be had to the method of cure laid down in the chapter concerning a Phthisis. So, in like manner, it was observed in the same paragraph, that hard tumours were sometimes produced in the breasts from suppressed menses, which required to be treated in the same way as a schirrhus. Hippocrates has remarked^r, that if the menses should indeed appear, but come away in smaller quantity than is proper, among other bad symptoms, the following are to be observed: “There
 “ is a pain sometimes in one part of the body, sometimes in another, chiefly about the loins, small of
 “ the back, groins, and the joints of the hands and
 “ feet; neither are all these pained at once, but in
 “ succession and by turns; and wherever the secreted
 “ blood, which the uterus cannot contain, shall force
 “ its way, or on whatever part it happens to fall,
 “ there a swelling takes place.” A little after he adds, that sometimes “ it makes the patient lame, or
 “ disables some particular parts, when through cold
 “ and stiffness, or absolute dislike to nutriment, the
 “ blood shall rush into any place, and form a concretion round some tendon, ligament, or nerve.”

It is pretty plain, that the cure of such disorders hath an obvious relation either to that of the palsy, or to the various diseases incident to the joints: the same holds true with regard to all the rest.

Of the DISEASES of WOMEN with CHILD.

§. 1293. **A** WOMAN with child is liable to many disorders, which owe their origin entirely to pregnancy.

It is very obvious that we are here only to consider those disorders which depend on pregnancy as a cause; and not those which may indeed happen during pregnancy, but owe their origin to other quite different sources;

^r De Mulier. Morb. lib. i. cap. 7. Charter. Tom. VII. p. 733, 734.

sources; for women with child are liable to diseases almost of every kind whatsoever.

From the demonstrations of physiology, it appears evident, that at the time when a woman, spurred on by amorous and eager desire, is properly filled with the male's prolific seed, and conceives, there is a remarkable change made in the uterus, Fallopian tubes, and ovaria^f. From many observations too, we are assured, that women, in the act of copulation, when they are impregnated, enjoy a more than ordinary degree of pleasure; whence this change in the female organs appropriated to generation, is also, with good reason, thought to be greater at the time of conception, than when coition is performed without impregnation immediately following.

We formerly took notice, at §. 1285. of that wonderful, regiminal power, governing or consenting principle (so termed by Van Helmont), wherewith the uterus, being affected from the slightest cause, may give disturbance to all the vital, animal, and natural functions, and that indeed in a way altogether various and surprising. Some things of a similar nature Hippocrates has also remarked to happen at the time of conception; for thus he says: *It is very well known, to people conversant in these affairs, that a woman no sooner conceives, than she begins to find a shivering and heat all over; her teeth chatter; and her joints, with the other parts of her body, are seized with convulsions, and the uterus with a numbness; and this happens even to women quite pure*^g. Here he seems, by the word *pure*, to mean healthy, active women, fond of venery, whose uteri are quite clean, nor clogged with viscid humours, or with that called the fluor albus; for he immediately subjoins what follows: *But when flabby, thick, phlegmatic women are in this condition, most of these feel nothing like it*^h. Then he wisely subjoins, *And*

^f Vide Boerh. Institut. Medic. p. 668, et seq.

^g Liquido autem constat harum rerum peritis, quod mulier, ubi concepit, statim inhorrescit, et incalescit, ac dentibus stridet, et articulum reliquumque corpus convulsio prehendit, et uterum torpor, idque iis, quæ puræ sunt, accidit. *De Carnibus, cap. 8. Charter. Tom. V. p. 309.*

^h Quæ vero crassæ et mucosæ patiuntur, pleræque harum mulierum illud non sentiunt. *Ibid.*

And as far, indeed, as I have it from themselves, so far only do I pretend to know^u. For a physician can no way come at the knowledge of these things, but from the accounts given by women themselves. It is certain that women of this sort, who are of a cold phlegmatic constitution, not easily spurred on to venery, hardly feel any delight in coition; and yet do sometimes conceive, though they perceive none of those symptoms we have just now mentioned: in the mean time, however, it commonly happens, that women, when they conceive, feel a surprising change at that time; and I know several married ladies of worth and credit, who have born a good many children, and who, from these signs, could calculate the time of conception and future delivery, even with the greatest exactness.

This is farther confirmed by Hippocrates, where he assures us, *That the public courtesans, who frequently experience these symptoms after venereal cohabitation, know very well when they have conceived, and immediately destroy the conception, which, when destroyed, drops away like a piece of flesh*^v, &c. From signs almost similar to these, he determines concerning womens fruitfulness, after irritating the genitals by pessaries, as in another place he has it: *If, after the trial of pessaries, not extremely violent, upon any woman, pains shall come into the joints; if her teeth shall chatter, or she is seized with blind giddiness and yawning; there are more hopes of her conceiving, than of one to whom none of these things happen*^w. Nor are these signs, which women perceive at the very time of conception, the only indications of pregnancy; for there are several others to be observed, which generally continue much longer: for thus Hippocrates affirms, *that one may know when a woman is pregnant, were it by no other signs*

^u Ac sane quantum illæ mihi ita indicarunt, tantum etiam me scire profiteor. *Ibid.*

^v Meretrices publicæ, quæ sæpius hæc expertæ sunt, ubi cum viro congressæ sunt, noscunt quando conceperint, moxque conceptum perdant, quo postea jam perito velut caro excidit, &c. *Ibid.* p. 308.

^w Si cui mulieri a pessariis non admodum vehementibus dolores ad articulos pervenerint, et dentium stridor detinuerit, tenebrosa vertigine laboraverit et oscitaverit, huic concipiendi major spes adest, quam cui nihil horum contingat. *De Infæcundis, cap. 6. Charter. Tom. VII. p. 846.*

signs than these: her eyes are observed to be more sunk and hollow, and their whites appear rather dusky and livid. Those who are with child have freckles in their face; and when they have begun to conceive, they have an aversion to wine, and loathing at all sorts of meat: they are besides troubled with heart-burn and excessive spitting*. Many other signs sometimes appear in pregnant women, and are different in different people: the nausea, however, and loathing of food, are the most frequently to be observed; and Hippocrates seems to draw from thence his chief indication of pregnancy, when he says, *If a woman's purgation stop without shivering or fever succeeding, and she is taken with loathing and nausea, this woman you may with good reason pronounce to be with child*†. For as such a loathing may arise, in women who are not pregnant, from bad humours lodging in the stomach or neighbouring intestines; therefore Hippocrates very sensibly adds, “if neither shivering or fever succeeds;” as in this case they generally used to do, unless this foul viscid matter had first been expelled by a vomit or evacuation of the belly.

In some pregnant women this loathing is universal, inasmuch that they have an aversion to every kind of eatable whatsoever: in many it happens that they have an abhorrence to this or that particular food, whilst all other they bear very well; and others, on the contrary, shall long earnestly after some particular meats and drinks, about which they were formerly very indifferent. I have known many married ladies, who, from this sign alone, were very well assured when they were with child, though no other symptom of pregnancy had as yet appeared. Sometimes women, when breeding, are tormented with grievous tooth-

VOL. XIII. D d aches:

* *Pregnantem mulierem, si non alio, hocce cognosces: oculi ei contracti et magis cavi cernuntur, et oculorum candidum albedinis naturam non habet, sed lividius apparet. Quæ utero gerunt, in facie ephe-dem habent, et, ubi concipere cœperunt, vinum odio habent, cibos versantur, cardiogmo vexantur, ac salivant. Ibid.*

† *Si mulieri purgationes non prodeant, neque horrore, neque febre, accedente, ciborum fastidia (nausea) ipsi accidant, hanc gravidam esse, ratione dicito. Aphor. 61. sect. 5. Charier. Tom. IX. p. 232.*

aches: in others I have observed the most violent pain in the ear, and frequently in one side of the head; to which they were seldom or never subject before their being with child. The number and diversity of such symptoms, as even happen in the very beginning of pregnancy, are vastly great; they are to be seen in the works of those who have wrote concerning Midwifery, and the Diseases of Women, as Mauriceau^z and others: for it would be rather tedious, than useful, to enumerate all of them particularly. It is sufficient to have observed, that even by pregnancy itself the functions in a female body may be considerably hurt and disordered.

Now these same disorders of the functions are all reckoned as signs of pregnancy. It is to be remembered, however, that here a physician ought to be exceeding cautious how he declares his opinion with regard to pregnancy; and never should either affirm or deny it, but from such indications as are the most certain, and beyond all doubt: as, for example, in the case where the motion of the child in the uterus, by laying one's hand upon the belly, shall be felt most distinctly; for many times the most skilful have been deceived. There is no circumstance where a physician's reputation runs so great a risk, as when he is employed to determine concerning pregnancy: if he is not exceeding cautious, there are every where a number of frauds, a number of insidious, cunning tricks, by which he may be easily imposed upon. Unhappy wretches, who are kept in prison under conviction of their crimes, being afraid of death, frequently pretend to be with child; and the judges have recourse to a physician, in order to determine whether they are really so or not. Should there remain the least doubt in this case, a prudent physician will advise the execution to be delayed, lest perhaps the innocent young one perish with the guilty mother. This, however, has several times happened, even although surgeons and midwives, after examination, have declared the pregnancy false and feigned, as medical historie shew

^z *Traite des Malad. des Femm. Grosses*, Tom. I. p. 67. et seq.

shew. Instances of such unhappy mistakes are also to be found in Mauriceau^a.

Women in dropfies too, sometimes contrary to all expectation, are found to be with child; nor can the strong cathartics and emetics, so often serviceable in those diseases, be here with safety administered, without danger of abortion. Formerly, when treating of the dropfy, we took notice of several such cases. Mauriceau^b had occasion to see a surgeon's wife, who for nine years had an ascites upon her, of such a size, that she looked, as one might have judged from the swelling of the belly, to have contained above thirty pints of water; yet, nevertheless, during the time of this distemper she brought forth four children, all alive and healthy. He assures us, likewise, that when he assisted her in the last delivery, the belly went no more down than if only the bulk of a hen's egg had come away; whence we may easily imagine the monstrous size of the tumour.

I happened myself to have the care of an unmarried woman, who, by her sly pretensions to great sanctity, was taken by all to be a virgin of the most uncorrupted chastity. For seven months from the time she had applied to me for advice, she was sure enough afflicted with a very strong degree of the ascites or dropfy in the belly; nor could I have, from any sign apparent, the least suspicion of her being with child. By means of smart hydragogue purges, her disorder was indeed successfully cured; but she herself took notice to me, that as she sat easing herself in the little house, something dropped out from the pudenda. Inquiring immediately into the affair, an abortion was found, which appeared to be about three months old: upon this she acknowledged herself guilty of fornication; but had no great difficulty in persuading me, that she knew nothing of her being with child, as her belly began to swell three or four months before she had conceived.

But very often it happens, that women, when they are clandestinely pregnant, attempt to impose upon

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physicians,

^a Ibid. p. 71. ^b Ibid. p. 73.

physicians, by pretending to have a dropfy, with the hopes of destroying the foetus by taking the strong powerful medicines given in those cases. Sometimes, under pretence of being very ill of an obstruction of their menses, they eagerly ask after the strongest emmenagogues. In these one ought to be exceedingly cautious. As to the examination of a midwife, whether the orifice of the uterus is close shut up, the anterior part of the lower belly just above the pubis is swelled, or the breasts begin to look full, they can easily elude all this, by solemnly affirming, and taking every thing sacred to witness, that their virginity is untouched; nay, I have known very worthy physicians who have given the highest offence, in some wealthy and fashionable families, when they seemed to be in the least suspicious of such a thing. My way, in a case of this kind, is to administer only innocent things with great solemnity and form, giving no sign whatever of my suspicion. By this means I hinder, perhaps, other physicians from being deceived; and while they think they are deceiving me, the time passes, and the causes of my just suspicions grow every day more evident: for every one who has written concerning the signs of pregnancy, even though they have been long eminent in the practice of midwifery, acknowledge with one consent, that the signs of pregnancy, especially in the first months of conception, are pretty uncertain. Avenzoar, a famous physician among the Arabians, confesses he was deceived in the case of his own wife^c.

Sometimes also it happens, that women of a more advanced age, and who approach to that time of life when the menstrual flux begins to cease, take for granted they are with child, as they have experienced the same uneasy symptoms usually attending pregnancy; and imagined also that they have felt, at the usual time, the motion of the child within their belly; whence all things have been prepared accordingly for their future delivery. Sydenham^d several times had observed this; and warns all physicians to be carefully attentive.

^c Ibid. p. 73. ^d *Tractat. de hydrop.* p. 611.

attentive in distinguishing such swellings of the abdomen from the dropſy, nor raſhly pronounce it a pregnancy, even although the breasts ſhould appear turgid and pour out ſome milk, and though the teſtimony of the midwife ſhould declare the woman to be with child, and that the motion of the foetus had been clearly perceived: for he remarks, “That the belly “ at length goes down, in the ſame gradual way as it “ increaſed, and puts an end to all their vain hopes.” This ſwelling of the belly he aſcribes to flatulency, be- cauſe ſuch a tumour, “for the moſt part, is familiar “ to widows, or even to women who have been of a “ pretty advanced age before they married.”

I had occaſion to ſee this happen to a lady of diſtinction, the mother of fourteen children, who for eight years had ceaſed to conceive, and now firmly believed herſelf to be with child, having again felt all the uneaſy ſymptoms which ſhe had experienced ſo many times before: nay, ſhe was highly offended at all who dared to entertain the leaſt doubt of it. Her belly, gradually increaſing for five months, went afterwards down in the ſame gradual way, and ſhe lived ſeveral years after in very good health: ſhe was ſo much aſhamed, however, of her having been thus deceived, that, afraid of being laughed at by all her acquaintance, ſhe kept the houſe for a whole year together.

I likewiſe ſaw another lady, who, at five and twenty years of age, had born a ſon; and, after having continued barren for the entire ſpace of twenty years, was delivered of a ſecond ſon, in the forty-fixth year of her age, notwithſtanding many imagined at the time, that all her hopes of being with child would prove to be fruitleſs at laſt. Hence it appears what great caution is neceſſary in determining poſitively concerning pregnancy; for inſtances of this kind happen not only among the women at an advanced time of life, but alſo among the younger ſort. Deuſingius, a celebrated phyſician at Groningen, about the middle of the laſt century, an author very keen in medical controverſy, treating of theſe caſes, in a letter to Thomas Bartholine, ſays^c, “Two years ago I had a young woman,

“ in the like condition, here under my own care, who
 “ had prepared every thing for her delivery, which,
 “ as she thought herself, was just at hand: her hopes,
 “ however, all vanished into air.” Several other instances of the same nature are frequently to be met with in authors of the best credit.

§. 1294. **S**OME of which arise from a suppression of the menstrual discharge, the os uteri being shut up, and the foetus as yet unable to take up the whole redundant blood for its nourishment and growth.

In a woman not with child the menstrual blood is excreted at a certain stated period, as was before observed in the preceding chapter: but when a woman becomes pregnant, her menses cease, and the principal sign of pregnancy is from thence deduced. But seeing, after the menses do cease, the uterine vessels are again gradually distended and filled, that is, to be ready for another period. Hippocrates^f therefore believed, that, when the vessels were in the state of plenitude, a woman could hardly conceive. *Wherefore,* says he, *if a woman is clear of that blood (that is, the menstrual), her womb will conceive; but not by any means, if she shall have much of it upon her: for it is when the uterus and veins are emptiest of blood that women most readily become pregnant; for women in this state conceive immediately after their menstrual purgation.* However, altho' naturally the menses cease in a woman with child; yet, with some, it happens, that, during the first months of pregnancy, they shall still continue to flow, without injury to the foetus, but for the most part in a smaller quantity.

We observed before, that in some women the menstrual blood not only came from the cavity of the uterus, but also frequently proceeded from the vessels about the vagina. Nay, I myself have seen a good many

^f Quare si eo sanguine vacuetur mulier, in ventre concipit; si vero copiosa fuerit, minime: uteris enim et venis sanguine vacuis, mulieres in se foetus concipiunt; hæ namque mulieres post menstruam purgationem utero concipiunt. *De Natur. Pueri, cap. 3. Charter. Tom. V. p. 313.*

many women, who, whilst their menses have come away at the usual time, though in little quantity, have yet assured me of their being with child, and a month gone: and the time of their delivery exactly answered to this computation.

Neither does it seem altogether impossible, that the menstrual blood should find its way, before the embryo inclosed in all its membranes be on all sides properly united to the uterus; especially if the orifice of the uterus shall not be exactly closed up: but it is at the same time evident in this case, that the embryo, already conceived, may very readily be carried away along with the blood which goes out, and so all hopes of pregnancy for that time taken away. Hence, unless there is a proper resistance in the vessels opening into the internal surface of the uterus when a woman has conceived, so as to allow no more blood to pass that way, the little embryo, not as yet of size to fill the cavity of the womb, may be washed off, if the orifice of the uterus gives way; or the extravasated blood, watering it on all sides, and ready to corrupt by stagnating, may hinder its necessary accretion to the uterus, and thus growing more acrid, may in a short time destroy this tender rudiment of a human creature.

We learn, from undoubted observations, that embryos have been conceived, and have grown to their proper magnitude, in the ovaria and Fallopian tubes, as we shall shew more fully afterward. May not the menses in this case, when the cavity of the uterus is free, continue to flow the whole time of this unhappy pregnancy?

All the phenomena seem at least to declare, that the uterus in the time of conception is constricted, the orifice is shut up, and the menses do not return. From thence Hippocrates determined his signs of conception begun^s: *For if a woman would know when she is with child, in the beginning let her not converse with her*

^s Quod si mulier se genituram concepisse noverit, primo tempore ne virum adeat, sed quiescat. Noscet autem, si vir emisisse se dixeret; mulier vero propter siccitatem ignoret. *De Infecundis, cap. 9. Charter. Lm. VII. p. 849.*

her husband, but abstain a little. She will know, however, if the husband says he has emitted, while she herself shall not be sensible on account of her dryness. For he took a retention, at least for some little time, of the seed thrown into the cavity of the uterus, to be absolutely necessary to conception; whence he adds what follows: But, if the uterus, in the same day, shall return the seed, she will be in a humid state; and if so, let her again mingle in the embraces of her husband until she conceives^b. But after that a woman has conceived, the mouth of the womb is entirely shut up, as Hippocrates observes: In those who are with child, the orifice of the uterus is closely contractedⁱ. Galen in his commentary upon this aphorism, looks upon this shutting up of the uterus as one of the most certain signs of pregnancy, when the midwife can reach it with her finger; for in the beginning of conception, it sometimes lies higher up in the vagina. In women, who have never had children before, the orifice of the uterus shuts up entirely; but not so exactly in those who have already been accustomed to child-bearing. Nor does Galen remark the shutting up of the os uteri only, but thus he has it: For the uterus, as soon as it has conceived the seed within its cavity, contracts itself all over, and shuts up the orifice^k. But seeing the orifice of the uterus may happen to be diseased, inflamed for instance, or schirrhous, it is therefore requisite, in order to draw any sure sign of pregnancy from thence, that the os uteri not only be shut, but likewise feel soft; whence Hippocrates in another aphorism says, In those, whose orifice of the uterus feels hard, the os uteri must necessarily be quite closed up^l. Wherefore Galen thinks, that this aphorism should follow immediately after the former one.

But

^b Quod si rursus eodem die uterus genituram reddiderit, humidus erit; et si humidus fuerit, rursus cum viro misceatur, quoad concipiat. *Ibid.*

ⁱ Qui utero gerunt, iis os uteri connivet. *Señ v. Aphor 51. Chrtier. Tom. IX. p. 224.*

^k Nam ubi primum uterus intra se semen concepit, universam capacitatem suam contrahit, osque claudit. *Comment. Ibid.*

^l Quibus os uteri durum est, his os uteri connivere necesse est. *Ibid. Aphor. 51. p. 228.*

But physicians, upon reflecting, that, in women with child, the blood, which was in use to go out every month by the uterus, must be retained; and that, in the beginning of pregnancy, the embryo being so small could not appropriate all that was retained, for its own particular use; hence they imagined, not without reason, that during the first months a plethora might very readily be apprehended, to which they attributed all these uneasy symptoms observed to affect pregnant women, and which we shall afterwards more particularly consider. In the chapter foregoing it was shewn, from abundance of proofs, that a far less quantity of blood was secreted by means of the menses, in wholesome vigorous women, than indeed was usually thought.

Another thing, however, deserves our particular attention; which is, that this retained blood in pregnant women is not intended so much for the use of the embryo itself as of the uterus; and that from this uterine blood the finer humours are indeed separated for the use of the embryo, but no red blood comes near it during the first weeks of conception. I have had occasion to examine several of the smallest embryos excluded together with the membranes and placenta; nor could I discover any red blood, either in the little body of the embryo itself, or in the membranes, or in the placenta, which in the beginning every one knows covers the whole surface of the chorion. But the uterus, being entirely vascular, is gradually distended, so that its cavity, so small in women not with child, shall, by degrees, be so dilated, as to be able to contain the fœtus with its secundines and waters collected within the membranes. But seeing the substance of the uterus in women not with child was found so compact and fleshy, and the cavity so very small, many believed from this that the uterus grew thinner according as it was distended, and that the thickness of its substance diminished in the same proportion as the cavity enlarged. This was Galen's opinion, where he is treating of the difference of the uterus according to the diversity of age: *Wherefore*

fore it is in the beginning of conception pretty thick; and again, when the time of delivery draws near, it is large indeed, but thin; for by being stretched out to such a length, the thickness is diminished during the rest of the time; therefore its thickness will be in proportion to the largeness^m. From many proofs we could shew, if it was necessary, that the ancient physicians had rather seen and examined the uterus of the larger sort of animals, than that of the human, and had applied all those things which they observed in brutes to females of the human species. Thus the division of the cavity of the uterus into right and left, which takes place in the forked uterus of other animals, is very unjustly ascribed to the human; whence all those predictions, concerning the sex of the fœtus, when they imagined that the males were placed in the right and the females in the left, must of course fall to the ground. Besides, the uteri of brutes are membranous and very thin, so far that the contained fœtus, with all the uterine membranes entire, and even the uterus itself untouched, may be clearly seen through them: the human womb is quite of another consistence.

Mauriceauⁿ obstinately defended this opinion of the ancients, and particularly Galen's, concerning the thinness of the gravid uterus, and endeavours to confirm it by several authorities: he was shocked to think that very eminent anatomists, and many others, should imagine that a gravid uterus, by a kind of miracle in nature, the more it was distended should increase the more in thickness; nay, he appeals to the ocular inspection of those who maintained so absurd an opinion. He would have the same thing obtain in the bladder, which, when empty, appears thick, but thin and membranous when distended with urine. He allows, indeed, that in the bodies of women who die soon

^m Rurſus igitur in principio conceptus craſſus; cum prope tempus pariendi accedit, magnus quidem, ſed tenuis; craſſitudo enim longitudinem extenſa abſumitur; in reliquo vero intercedente tempore, pro ratione magnitudinis, craſſitiem habet. *De Uteri Diſſect.* cap. 8. *Charter. Tom. IV. p. 280.*

ⁿ *Traite des femmes groſſes, Tom. I. p. 20. et ſeq.*

soon after delivery, the uterus is near the breadth of two fingers in thickness; but this he attributes to the contraction of the uterus when empty: nor does he deny the thickness of the uterus found in women who die without being delivered; but insists on its being preternatural, and occasioned by inflammation, and from the afflux of humours after the long and fruitless pains suffered in labour.

Whence he concludes, that the thickness of the uterus cannot be demonstrated as natural, unless in the body of a woman who died, near her time of delivery, with a full uterus, without any morbid symptom whatever. But seeing such a case rarely happens, he desires, in the mean time, that an impregnated sheep's uterus may be inspected, which manifestly appears both membranous and thin.

In this we see a deplorable instance, how the best of men, passionately intent on defending a pre-conceived opinion, cannot sometimes be brought to credit their own eyes: but this opinion is very judiciously refuted by a celebrated author in midwifery^o. What Mauriceau besides desired to see, in order to be convinced of the thickness of a gravid uterus, by chance fell under the inspection of the celebrated Littre^p, who had an opportunity to observe the substance of the uterus, about eight lines thick, in the body of a woman, who, in the eighth month of her pregnancy, happened to die suddenly by a fall. The like thickness of the uterus was observed by Mery^q, in the body of a woman who died four hours after delivery. From which it is plain, that the thickness appearing in an empty uterus is not owing to its contraction, as Mauriceau would maintain; for a full uterus exhibits the same thickness of substance. But, as Daventer^r very ingeniously remarks, the thickness of the uterus is one cause, which prevents the fundus from being so easily inverted after delivery, and, by going out of the capacious orifice of the uterus, occasioning

^o Daventer novum lumen, &c. cap. 8. p. 29. et seq.
des scienc. 1701. Mem. p. 385.

^p Acad,

^q Ibid. 1706. Hist. pag. 27.

^r Novum lumen, &c. cap. 23. p. 30.

occasioning a troublesome prolapsus, especially in bringing away the placenta; for if the uterus was thin and membranous, such a prolapsus could hardly be prevented. But Daventer, who was so long a very eminent practitioner in the art, declares that this very seldom happens; and then only, “when, for instance, it happens to be remarkably thin; for in that case, indeed, it is folded round the hand like wet linen cloth; nor does it then so quickly, or so easily contract; which is a circumstance I do not like, but would much rather have it to keep its usual shape, and immediately after delivery to contract rightly, and to close upon the hand before it be retracted; for in this case a far less number of inconvenient and troublesome symptoms are then to be apprehended.” But as to this flaccidity of the uterus, and the inconveniences from thence arising, we shall afterwards speak more fully, when we come to the diseases of child-bearing.

As it often happens, when men of science and learning warmly espouse different opinions, some have maintained that the uterus grows thinner when distended; others, that it is rendered much thicker than ever. Sure enough, in virgins, and women who never have had children, the uterus is of a pretty solid and firm consistence, equal in thickness to the breadth of the little finger, and sometimes even exceeding that measure: hence, if such a uterus be impregnated, and towards the time of delivery be so very much distended, and yet shall retain its former thickness, there must certainly be a very considerable accession of real matter, to enable the cavity to be so much enlarged without diminution to the thickness of its sides. The ingenious Noortwyck^s, with whom I have the happiness to be intimately connected by friendship, affinity, and mutual intercourse in the same sort of studies, having minutely considered all those particulars, is of opinion, that for the most part, or at least very frequently, it retains its former thickness. The gravid uterus, which he has described

^s Noortwyck *uteri humani gravidi, anat. et histor.* p. 111.

bed so accurately in his account of it; and of which he has given a farther demonstration by a curious engraving^t, performed by a skilful artist, from the uterus itself suspended in liquor; appears not much to exceed the natural thickness of the uterus before impregnation: whence he very justly thinks, that, in women with child, the substance of the uterus may sometimes increase, sometimes remain the same, and, if it sometimes chance to be extenuated, must be considered as a rare and extraordinary case. But seeing it is past all manner of doubt, and so well expressed in that most beautiful plate, that the uterine vessels do not all run in the same plane, but by various interstitial divisions, between the lamellated substance of the uterus; and that these vessels, during the time of pregnancy, are remarkably dilated, and replete with blood; it is very evident that an attenuation of the uterus, at this time, cannot, according to nature, take place, but, whenever it so happens, must have always been owing to something unnatural and morbid. At the same time it is plain, that the greater the quantity of blood is, with which the uterine vessels shall be distended, and of course more dilated, so much more will the substance of the uterus be increased as to thickness; whence we may see a reason, why it is of a different thickness in different subjects. Of what capacity these vessels may be found, and how large the sinuses of the uterus may be when filled with blood, and communicating with the chorion and placenta, are to be seen in the same author^u, who has written every thing in relation to the gravid uterus with the strictest regard to truth, and has affirmed nothing which he had not clearly demonstrated beforehand both to myself and others.

Upon looking into the fine engravings of the gravid uterus, published afterwards by the celebrated Albinus, to whom our profession is so much obliged, it will, in like manner, be seen how large the vessels are which fill the substance of the uterus during pregnancy:

VOL. XIII.

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^t Noortwyck uteri humani gravidi anat. et histor. pag. 205.

^u Ibid. p. 10.

nancy: whence de Graaf ^w compared the uterus, in women big with child, to a sponge filled with blood; and was astonished to consider how the same, after delivery, should so contract, as to return in the space of sixteen days to its former magnitude; the blood, which distended the vessels of the uterus in time of pregnancy, going off by the flowing of the lochia.

In women, who had died in child-bed after delivery, he found these vessels still very large; “for, upon throwing in any liquor, by means of a syringe, into the hypogastric or spermatic arteries, it quickly filled, like a blast of air, the whole capacity of the uterus.”

From all which it is very evident, that the menstrual blood, which in women with child, according to the laws of nature, is retained within the body, serves not only for the growth of the foetus, but is also necessary for distending, and filling at the same time, the vessels of the uterus. This observation is of no inconsiderable importance, as we shall afterwards shew, in the management of disorders incident to women with child.

How excellently well does this correspond to the doctrine of Hippocrates^x! “For when a woman (says he) is with child, the blood is gradually brought from every place of the body to the uterus; and this, which is collected in a circle, as it were, all about the uterus, causes it to increase.” But in another place, where he is explaining why a woman feels no inconvenience from the want of her menses during her pregnancy, he says^y, “That the blood, which used to go out every month, in a certain accumulated quantity, is put in no hurry; but unperceived and gradually, without pain, retires within the substance of the uterus; from whence, that which is contained within receives a gradual increase. But here it is carried every day, and not every month; for this reason, that the conception

^w De mulierum organis, cap. 8. p. 104. 105.
morb. lib. i. cap. 23. Charter. Tom. VII. p. 744.
pueri, cap. 3. Charter. Tom. VI. p. 312.

^x De mulierum
^y De natura

“ ception contained within the uterus may always
 “ draw something from the body in proportion to its
 “ strength, and the breathing goes on after the same
 “ manner. As at first the breath of life is indeed
 “ but very little, so there is little blood carried from
 “ the mother ; but when there is a more ample de-
 “ gree of breathing, it also takes up more blood,
 “ which then comes to the uterus in greater quan-
 “ tity.”

The human ovum, therefore, is not only contiguous every where to the hollow surface of the uterus ; but, being also intimately joined by accretion, is perpetually cherished by the constant warmth of the red blood plentifully contained in the substance of the surrounding womb ; and thus an incubation, or hatching, goes on within the substance of a woman's body, which, in oviparous animals, is performed without their bodies. Whence we see to what admirable uses the blood is assigned, which was before accustomed to go out every month, but now, retained within the uterine vessels, contributes to fill and distend them by a gentle and gradual dilatation. Harvey ² ascribes to the red blood the first part of the formation and growth of the beginning embryo ; nay, he maintains it to exist even before the heart or vessels, and that with it life itself begins at first coming into the world, and is last of all terminated by it when the period of life is about to end. “ From thence first comes the
 “ vital spirit, and native heat, before every thing else ;
 “ in which is perceived the first spark of the calidum
 “ innatum, or that native implanted or in-born heat
 “ of physicians ; and where that household familiar
 “ deity, or that perpetual fire, takes up its residence ;
 “ whence life continually imparts its influence to the
 “ whole body, and to every part in particular, and
 “ from whence proceeds whatever serves towards its
 “ growth, nourishment, assistance, and comfort, &c.
 “ In which, heat principally abounds, as in its ori-
 “ ginal source, and continues to increase ; and from
 “ which all the other parts of the whole body, by its

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“ kindly

² De Generat. Animal. exercitat. 51. p. 199, et seq.

“ kindly influence, are cherished, and receive life: for
 “ the heat, accompanying the blood, moistens, che-
 “ rishes, and preserves the whole body.”

It is well known, that in a fecundated egg the first rudiments of the chick may remain a long time concealed, without any signs of life or increase. Let a due degree of heat, whether by the sitting of the hen, or any other means, be applied; and immediately there follow motion, life, and gradual increase; and in so quick a progression indeed, that, in the space of twenty days, the most minute molecula, eluding before the acuteſt ſenſe, ſhall now exhibit to view a chicken in full perfection, which having, by its own native force, broken the ſhell where it had been imprifoned, runs about at perfect liberty. That plentiful circumfuſion of warm blood, continued through the uterine veſſels, ſeems in like manner to be of no inconfiderable aſſiſtance towards the growth of the human embryo.

§. 1295. **O**THERS ariſe from the bulk and motion of the foetus, and of the ſecundines and waters, acting upon theſe very ſenſible parts.

A gravid uterus puſhes up its bottom into the abdomen, preſſes upon the reſt of the viſcera, removes them from there natural ſituation, and ſo much the more in proportion to the time of continuance there. During the firſt two or three months of pregnancy, the uterus can as yet occaſion little uneaſineſs from the increaſe of its bulk; but from the months following, to the time of delivery, it may be the cauſe of many inconveniencies. In the body of a woman, who, being ſix months gone with child, fell into the water, and was ſuffocated, the bottom of the uterus was found touching the ſtomach^a: but between the anterior part of the ſwelled uterus and the peritonæum, nothing, either of the inteſtines, or omentum, was to be in the leaſt obſerved; for all theſe viſcera were found to have

^a Denys over het ampt der vroedmeesters, &c. pag. 54.

have been moved aside, whence the surface of the uterus anteriorly was perfectly contiguous to the peritonæum. Hence we see the reason why the motion of the foetus, in the uterus, by laying the hand upon the abdomen, may be so easily perceived. But the posterior part of the uterus lies also upon the os sacrum and vertebræ of the loins, without any of the viscera interposing^b. The stomach has also been found lying above the bottom of the uterus, in other bodies of women who died pregnant, and the omentum, together with a considerable part of the intestines, pushed up and compressed back towards the diaphragma. The like extraordinary and surprising changes of situation, with regard to the viscera, may be seen in many other authors^c. It is therefore evident, that sometimes there is considerable violence done to the viscera, when, by the swelling of the uterus, they are moved aside, so as the intestines shall be every where compressed; the aliments being thus hindered in their passage through the thinner guts, while the fæces are retained and accumulated in the thicker. From the same cause, the passage of the bile into the duodenum is rendered more difficult: whence it is, that slight touches of the jaundice are so often observed to happen in women with child; which cease, for the most part, after delivery, unless the bile, retained in the gall-bladder, has acquired a thicker consistence, or formed into calculous concretions, which, on account of the narrowness of the passage, cannot easily get out by the ducts. This, however, is seldom the case, excepting in such as have had already a tendency to these disorders before they ever were pregnant; for the jaundice is but slight, for the most part, which is observed in women with child. In the time of pregnancy, from this diversity of compression upon the viscera, many are the symptoms, indeed, which may arise. Might not Hippocrates have had this in view, when he says, *If you would know when a woman is pregnant, give her some water and honey to drink, as she lies down to rest: and if she shall have gripes in her belly,*

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^b Ibid. p. 56. 62.^c Levret l'art des accouchem. &c. p. 57.

ſhe has certainly conceived; if otherwiſe, not^d? Galen, in his commentary on this place, remarks, that Hippocrates gave here crude water and honey, becauſe of its flatulency being neceſſary in this diagnosis. He ſeems, however, to have tried this diagnosis in the firſt months after conception, becauſe, about the fourth month, ſooner or later, a woman with child uſually feels the motion of the fœtus^e, which is reckoned a much ſurer ſign of pregnancy than the gripes felt after drinking of water and honey. Galen, however, adds very pertinently, that thoſe gripes happened to women, who had conceived, (*δια την απο της μητρας ſεινοχωριαν*) on account of the narrowneſs of the places, cauſed by the ſwelling of the uterus.

From this cauſe, Mauriceau^f and others have deduced the adſtricted belly common to women with child: but from this alſo we may underſtand, why ſome women, towards the end of their pregnancy, are moleſted with a troubleſome reaching, particularly thoſe whoſe uterus goes higher up than uſual, and, preſſing upon the ſtomach, either irritates it in this manner, or at leaſt hinders its diſtenſion by the aliment. If the uterus, according to the example we gave a little above, riſing up into the abdomen about the ſixth month, ſhall touch the bottom of the ſtomach, it is eaſy to conceive, how it may preſs and ſtraiten the ſame in the laſt month of geſtation. Such a vomiting, however, we cannot expect to cure, till by delivery the womb is diſcharged of its contents. The only relief, for the preſent, is to eat and drink but little at a time, frequently, and juſt ſo much as may nourish them without diſtending the ſtomach^g. If then ſo many inconveniences can ariſe from the bulk only of a diſtended uterus, it is plain that theſe may be very much increaſed when the fœtus, ſtirring itſelf violently in the womb, ſtrikes forcibly upon any of the neighbouring viſcera.

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^d Si noſſe velis, an mulier conceperit, dormituræ aquam muſſam potui dato: quod ſi tormina habuerit circa ventrem, concepit; ſin minus, non concepit. *ſect. v. Aphor. 12. Charter. Tom. IX. p. 219.*

^e Mauriceau *Traite des Malad. des Femmes Groſſes, Tom. I. p. 92.*
^f *Tom. I. p. 124.* ^g *Tom. I. p. 130.*

The hopes however are, that the viscera, when the uterus is once empty, changing their situation, may in a short time again resume their natural place. This, indeed, for the most part happens; though not always. Caspar Bauhin^h, when treating of the omentum, has made the following remark: "With some, after delivery, it remains gathered up towards the middle of the belly, so as frequently to occasion no inconsiderable degree of pain." The omentum, in most people, is of a considerable size, lying loose upon the intestines: these it cherishes and keeps warm, moistens and lubricates, while, as it consists of duplicated lamellæ sliding upon each other, it easily gives way, and changes situation: for in animals cut open soon after feeding, the omentum seems gathered up, as it were, under the stomach; but, when the stomach is empty, goes lower down towards the parts below. Now, from the time the uterus gets above the os pubis, it raises the intestines and omentum, and pushes them gradually to each side. Sometimes, however, the omentum seems to be convolved and twisted by this rising of the uterus: if then, either from the compression of the womb, or from any other cause whatever, the omentum shall become dry, and shrink up, the concretion of its lamellæ may be apprehended; nor will it be able, after delivery, to disentangle itself, so as to regain its wonted situation. Ruyschⁱ several times observed hard tumours of an oblong shape, remaining in the abdomen after delivery; and confesses he was long doubtful what to think of them, till, in the dissection of a dead body, he discovered the cause: for he saw "the omentum, which was about two fingers breadth in thickness, three fingers broad, and about a span and a half in length, degenerated into a fattish fleshy sort of substance, and schirrhous withal." But this bulky mass, as the figure has expressed it, adhered above to the bottom of the stomach, and below to the fundus uteri: it therefore seems very likely, that the fundus uteri, when

^h Theat. Anatom. lib. i. p. 79. cap. 12.
Chirurg. Centur. obs. 63. p. 59.

ⁱ Observat. Anatom.

when it ascended, had raised the omentum, and pressed it to the bottom of the stomach, and firmly attached itself to it; and that after delivery, the uterus, contracting and bringing down the attached part of the omentum, had produced this oblong tumour in the abdomen. Ruyfch had seen and felt several such tumours in living subjects, some of which were situated crosswise, others obliquely: He also remarks, “ that women have carried these tumours about with
 “ them for many years, without any great pain, nay,
 “ sometimes without any pain at all, though not,
 “ however, without some little inconvenience.”

We saw formerly, from numbers of observations, when discoursing of the Dropsy, in how surprising a manner the omentum might degenerate, and produce the most obstinate and difficult disorders.

When the uterus ascends gradually in a straight direction, the situation of the viscera is indeed changed, but gently, and with little force: but when the bottom of the uterus, in pregnancy, inclines either to the right or left side, there happens a more unequal pressure, which then may be productive of many disorders. A surprising case of this kind we find among the observations of the celebrated Littre^k, where a gravid uterus, through a fault in the ligaments, always inclining to the right side, had pressed the liver upwards against the diaphragma; and by changing its situation and form, and straitening the cavity of the breast, had occasioned palpitations of the heart, &c. The first child was of so large a size, that it could not possibly be excluded, but died, and was obliged to be extracted piecemeal out of the body. Afterwards she bare two more infants with very good success; but the uterus, during the whole time of pregnancy, always inclined to the right side.

But seeing it appeared, from the observations formerly mentioned, that nothing interposed between a gravid uterus when swelled and the vertebræ of the back, the aorta descendens, which goes down along the fore-part of these vertebræ, may be likewise so pressed

^k Académ. des Sciences, l'an. 1709. Hist. p. 32.

pressed by the incumbent uterus, that the blood, driven from the heart, may be obstructed in its passage towards the parts below, and hence the parts above will be filled to a greater degree. But formerly, when treating of the Apoplexy, it was remarked, at §. 1010. N^o III. 3. that from a compression of the neighbouring parts by a pregnant uterus, the force and quantity of the blood towards the head might be greatly increased, and so occasion no inconsiderable degree of danger; which also we confirmed from the authority of Hippocrates there cited, where he says, “Head-aches, arising in women with child, attended with slumber and heaviness, are bad: such are also ready to be seized with convulsions.” In the same place it was also remarked, that the word *τας επιτοκας* did not mean simply *pregnant*, but that stage nearest the time of delivery; for then, by the great size of the swelled uterus, there was more danger of a compression of the vessels.

§. 1296. **F**ROM the first cause, (§. 1294.) that is, a retention of the menstrual flux, seem to arise the nausea, vomiting, loss of appetite, or one totally depraved; faintings, vertigos; intense pains of the stomach, pubes, groin, kidneys, and breasts; a torpor and sense of weight, a difficulty of breathing, and abortions.

In this aphorism are enumerated the principal symptoms which usually attend upon pregnancy; not indeed that all these appear together in every woman with child, but a greater or lesser number of them are to be met with in different women during that state: all these disorders, however, are usually ascribed to the same cause, to wit, to too great a quantity of blood arising from the retained menses, which the fœtus cannot as yet consume for the purposes of its growth or nourishment, as (§. 1294.) was before observed.

But in the same place it was remarked, that the
quan-

quantity of blood, excreted by the menses, was not so great as people commonly imagined, and that a considerable part of it was taken in to fill the uterine vessels during their enlargement: whence a just doubt arises, whether these symptoms in women with child are entirely owing to a plethora alone.

Now a plethora has undoubted signs, mentioned at §. 106. by which it may be distinguished. Are these to be found, pray, in every pregnant woman, who only suffers perhaps some partial kinds of these symptoms here recounted? Amongst the signs of pregnancy, mentioned at §. 1293, were reckoned a more than ordinary contraction and hollowness of the eyes, and a lividness in their whites. These however are not the signs of a plethora; for in a plethora the eyes rather swell out, and the whites are streaked with red. In many pregnant women I have observed the visage pale and contracted, whilst they laboured under several other pretty severe symptoms of pregnancy.

Besides, most women are impregnated after the menstrual flux has finished its period: whence experienced matrons usually calculate the time of delivery, by placing the first of their reckoning fourteen days after the beginning of the last menstrual flux; and the event has generally confirmed this computation to be pretty exact. Now, all this time, there cannot, as yet, any plethora take place from retained menses. I have frequently seen, however, in the very beginning of conception, a squeamishness and vomiting come on. A very handsome girl, I remember, who was married to a vigorous young man, next day after the nuptials was taken with a nausea and vomiting, and afterwards had a strange longing for some particular kind of things. She could not help being highly offended, when, at a merry entertainment of friends, she was, by all, congratulated on her pregnancy. At the end of nine months however, reckoned exactly from that time, she brought forth a wholesome, stout, and vigorous infant. In another pretty strong woman, there came immediately, after conception, a grievous pain into her stomach and back:

back: she grew very fearful and apprehensive, and was forced to lie down perpetually on her bed; was troubled with constant belching and flatulency, and had extreme weariness of body; her senses were all benumbed and stupid, and her face pale as a corpse. She remained in this extremely miserable condition till the fifth month of her pregnancy, when she began to vomit; and afterwards, gathering strength, she left her bed, and continued pretty well all the rest of her reckoning. This woman had brought forth several children, and had always to go through the same disagreeable sufferings, notwithstanding the attempts of many very skilful physicians to give her relief. Bleeding and many other remedies were tried, but nothing would do.

It may be said, I know, in opposition to this, that these cases are rare, and seldom to be observed: but this at least may be concluded from thence, that some certain symptoms, observed during pregnancy, have not always a plethora for their cause. Besides, it is very obvious, that women sometimes nauseate and have an aversion to some particular meats which formerly they used to like, and take an unusual fancy to others of a very uncommon kind; and as they have experienced the like symptoms before, yet, doubtful of their pregnancy, wait with impatience till the next period of their menstrual flux, which, if it does not appear, then they believe themselves to be with child, and date the beginning of their pregnancy from the time when they had first observed these symptoms. Now, even in these cases, which surely are by no means rare, a plethora cannot be said to cause those symptoms, as it had not appeared; and that maxim of the schools is always universally admitted, that no effect can possibly be prior to its cause. At the very time of impregnation there is a remarkable change of the uterus, and parts adjoining to the uterus, which relate in any way to generation; and this, afterwards, seems rather to be the cause of all those symptoms which usually accompany pregnancy, and more especially appears from what has been formerly said concerning
that

that power by which the consenting or governing principle acts upon all other parts of the body.

Nausea, vomiting, loss of appetite.] This is a disorder so common to women conceiving, that most of them bear it with patience, and hardly ever have any recourse for relief; especially as they have frequently experienced it before, and know, that as their pregnancy goes on, these troublesome complaints gradually wear off, and at length entirely cease; for they very rarely continue beyond the third month. Some indeed, towards the end of their pregnancy, are troubled with nausea and vomiting, on account of the uterus swelling up so big, and, as hath been mentioned above, touching, in the sixth month, the bottom of the stomach: but here we are considering the nausea and vomiting which begin to appear on the very first days of conception^a. The same author remarks, that these symptoms are by no means produced from any collection of filthy, depraved humours, lodged in the stomach; and therefore do not require the use of evacuates, which, in this first stage of pregnancy, especially if they are of the stronger kind, can hardly be administered with safety. See also what has been said on this affair, in the chapter concerning Nausea, at §. 642, n^o 5. It cannot, however, be denied, but that, if these shall continue long to be very troublesome, the functions of the chylopoietic viscera may be so injured, as that, by loathing, and having so miserable an aversion to all manner of eating and drinking, a filthy collection of depraved humours may sometimes be lodged in the stomach and first passages, which require to be expelled, especially if unfavoury belchings, a bitter taste in the mouth, or foulness of the tongue, shall confirm these indications. A gentle purge, particularly of rhubarb, used to be in this case of remarkable service^b; for any thing stronger is with the greatest caution to be avoided. This method has been recommended by all the best authors who have written upon the diseases of pregnant women; and is agreeable to the

^a Mauriceau *Traite des Malad. des Femm. Grosses*, Tom. I. p. 128, 129. ^b *Ibid.* p. 13.

the authority of Hippocrates, which thus allows, *That, if the humour should abound to excess, pregnant women may use a purgative medicine, from the fourth month of their pregnancy, until the seventh; but these last hardly at all; but all purgatives are to be avoided, at a later, or earlier period^c.* It is plain, therefore, that Hippocrates has not recommended purging in that nausea and vomiting which happen in the first stage of pregnancy, and usually cease about the third month, and sometimes sooner; but only in that case where an abundance of depraved humours prevails: for as, in the first months, there is the greatest danger of abortion, therefore he orders such medicines strictly to be avoided all that time; as also in the last months, lest the gripings, frequently occasioned by purges, should excite the labour-pains, and the foetus, not as yet fully ripe, be excluded before its due time. But as, in another place, he has the following remark, *If, in a woman with child, the belly shall be very loose, there is then danger of abortion^d;* we may therefore conclude that the purgatives he employed were all of the milder sort.

I once had occasion to see a case, where the nausea and vomiting returned after the turning of the foetus, and when the uterus was moving down to the parts below; which could hardly be attributed to the fundus of the uterus touching the bottom of the stomach. A little Sherry, with some biscuit, gave almost immediate relief; which Mauriceau likewise recommends^e, who used sometimes to give a little brandy in similar cases. Should the woman be plethoric, or of a warm habit of body, the use of such warm things would not be so safe, until the fulness was a little taken off by opening a vein; however, these rich balsamic wines, administered in small quantity, give presently great relief, agreeable to Hippocrates, who thought, *That*

VOL. XIII. F f generous

^c Prægnantes medicamentis purgandæ sunt, si humor turgeat, quæmestres et ad septimam usque mensẽ; sed hæ minus: minoribus autem, aut grandioribus, foetibus cavendæ sunt purgationes. *Seçt. iv. Aphor. i. Charter. Tom. IX. p. 130.*

^d Mulieri utero gerenti, si alvus multoties fluat, abortionis periculum. *Seçt. v. Aphor. 34. Ibid. p. 214.*

^e Ibid.

generous sorts of liquor were more kindly to the uterus, and better adapted to the nourishment of the fœtus^f.

But when a perpetual nausea has afflicted women with child, so as that it was scarcely to be any longer suffered, and which is very often ready to affect the whole nervous system, this I have often very happily composed by a few drops of liquid laudanum. See what has been said at §. 644, n^o 5.

Or one totally depraved.] As the appetite becomes so variously depraved, it is by the Greeks called *χίνα* or *χίττα*^g, after the magpye; because it has wings of so many different colours, and a great variety in its notes. It is also called *malacia*, or the *green-sickness*, because it is not only observed in women with child, but sometimes also in young virgins. This depraved appetite sometimes has a longing desire after things the most absurd. Thus Hippocrates^h has remarked, that women with child sometimes have a particular desire to eat chalk or coal-cinders, and the mark shall appear upon the child's head when brought forth into the world. There are a vast number of instances, of the depraved appetite of pregnant women, to be met with in medical histories; such as their greedily devouring, with great secrecy, the lime from walls, plaster, wool, and the like. Very frequently also it happens, that they are carried with a most eager appetite to certain meats, and eat an amazing quantity. Tulpiusⁱ says, he saw a woman, "who, " being with child, was so exceeding fond of salted " herrings, that before her delivery she had eaten " fourteen hundred, and this without any offence to " her stomach or prejudice to her health." Dividing this number by her reckoning, it is plain, she must have eaten about five herrings every day: a dish sufficiently relishing indeed, but which the strongest and most vigorous man could hardly bear. But even the child too was affected with the same eagerness of appetite; for, " as it could not by means of words, yet " by

^f Meraciores potus ad uteros, et fœtus nutritionem, meliores existunt. *De Salubr. Viſt. Rat. textu* 24. *Charter. Tom. VI. p. 233.*

^g Moschion apud Spach. p. 3. n^o 28. ^h De Superfoetatione, cap. 6. *Charter. Tom. VII. p. 863.* ⁱ *Observat. Medic. lib. ii. cap. 24. p. 132.*

“ by its crying, it demanded to be helped with some herrings.” It is every where the custom to let women, who are pregnant, have whatever they desire, if it is not very highly absurd, or absolutely pernicious, be the expence and difficulty ever so great to procure it: whence Manningham^k has laid down this practical axiom, that “ notwithstanding the aliments, which pregnant women very eagerly desired, might not be otherwise so very proper for nourishment, yet they are by all means, however, to be preferred to such kinds as they avoid and have an aversion to.” Nor does this violent desire for particular meats and drinks continue through the whole course of pregnancy, as in that woman who devoured so many herrings; but I have frequently seen it go off very soon, and sometimes return again. Thus I knew a lady of the greatest worth, who had never in the least been addicted to drinking, for a day or two began to have an eager fancy for wine: being much ashamed, however, she would not ask for more than she usually took: the husband, guessing the affair, cunningly gave her an opportunity of satisfying this eager desire; without the knowledge of any body whatsoever: she has confessed afterwards, that nothing ever was so delightful; and though she drank a pretty large quantity, she never was in the least disordered by it.

Faintings.] Which frequently happen during pregnancy, especially in women of a more tender and delicate make: sometimes too they use to follow after a violent nausea; but go off soon, upon application of scented vinegar, fragrant wine, or some gentle aromatic to the nostrils, and sometimes with the addition of the milder anti-hysterical remedies, of which we shall say more afterwards at §. 1300. Sometimes there is a slight fainting, occasioned from the violent struggling of the child in the womb, as also when they continue too long upon their knees. Besides, by the vast increase of both uterus and fœtus, a great quantity of blood is contained within the substance of the uterus, and in the vessels of the placenta: and also the turgent

uterus sometimes presses upon the iliac veins; the arteries, indeed, not so much, as they are firmer: whence there is a great quantity of blood retained in and below the pelvis, which does not return to the heart, or at least not all of it; whence the strength of the heart is considerably weakened. But if the situation of the body shall happen to be altered, by lying down in bed, or any other way whatsoever, the veins are sometimes freed from compression, and a great quantity of blood comes rushing to the heart, and for some moments almost overwhelms it: whence arises a palpitation; and a qualm, just as if ready to faint, immediately follows, till this blood shall be more equally distributed again; for then all these symptoms go off.

Vertigoes.] From a vertigo, though it is the slightest disorder in the brain, all the more terrible disorders of the head usually begin; and, when these are cured, generally it is the last symptom which remains with the patient. Frequently it precedes and accompanies a fainting, and most frequently a nausea, even in persons who were in the very best health a little before; such as those whose bodies are quickly turned round in a circle, or sailing upon the sea, or who look down from any very great height, &c. hence a vertigo may arise from very slight causes. A vertigo is frequently the consequence of a plethora, when the vessels of the brain are swelled and full; which may be cured by emptying the vessels: and this is commonly the cause which is blamed in women with child, which may sometimes, though not always, be the real one; seeing also the same causes, which produce fainting, nausea, and vomiting, bring likewise on a vertigo, and therefore require the same method of cure.

Intense pains in the stomach.] As an acrimonious acid so often produces heart-burns and severe pains in the belly, (see §. 63.) from the same cause likewise such symptoms may happen to women with child, if they are much addicted to meats and drink, which are either acid or quickly become so; especially when these cannot be so easily subdued and digested, on account

count of the first concocting passages being weakened by frequent nausea, and therefore in their own nature prevail; whence Manningham ' makes the following observation: " Let women with child, whose stomachs are sour, or who have been used to complain of heart-burns, abstain from all sour unripe fruits, as also from sugar; and let them likewise avoid wine; for wine causes the aliments to sour in the stomach, and is itself of an acid nature." Earths which absorb acids, as crabs-eyes and the like, take off this complaint pretty effectually: Spanish and other balsamic wines, as tokay, &c. do not sour so easily, and therefore may be used in preference to any other. But the most sensible part of all seems to be the upper orifice of the stomach, which, when irritated by acids, or any other sort of acrimony, occasions the most intolerable pains.

We know, that when any one has been drinking sour wine, he scarcely feels any uneasiness at the time, till he shall belch, or be jolted in a carriage, so as the contents of the stomach, now become acrid, shall wash the upper orifice, and, as it usually does, occasion a heart-burn. Now, if it is considered, that the uterus, when swelled up, presses upon the bottom of the stomach, and sometimes changes its situation, we shall easily see the reason why the heart-burn, as well as any other effect, may be produced from pregnancy. Many observations demonstrate, that very obstinate pains sometimes beset the stomach, when schirrhous tumours, either adhering to it, or bred in its substance, continue to act by pressure, or pulling it down by their enormous weight. I have sometimes seen women, subject to these pains, after the fourth month of pregnancy perfectly easy; but they returned again after delivery. May not the bulk of the uterus in swelling have supported these tumours, so as to cause less uneasiness to the stomach? It seems not improbable. I cannot, however, be certain, having had no opportunities of inspecting the bodies of any in whom I had observed these particular symptoms.

But may not a similar pain be occasioned not only from pressure or a change in the situation of the stomach, but also by that consenting principle by which the uterus itself may affect very remote parts of the body, and which, as we observed before, is called the regiminal action or governing principle? Hippocrates seems to give some such hint; for when he is recounting all that happens during pregnancy, and what arises towards the time of delivery, he subjoins, *The whole intermediate time almost she is oppressed with a pain at the mouth of the stomach, on account of the belly every where embracing the fœtus, but chiefly on account of the uterus itself*². At the time of labour, however, when the uterus is preparing to discharge its burden, Hippocrates remarks, that the upper orifice of the stomach is the first place affected, and gives it as a sign of delivery being very near at hand: *Those who feel a pain at the mouth of the stomach in time of labour, will soon be delivered*³. For he does not speak here of the heart-burn which exists during pregnancy, but that which comes suddenly on in the time of labour pains.

Pubes, groins, and kidneys.] If the change of the situation of all the abdominal viscera from the swelling up of the uterus be considered, it will not seem strange that various pains should arise from the distraction, or even compression, of certain parts; especially if there should happen a preternatural concretion of the abdominal viscera between themselves, or union to the parts adjacent.

It is very certain, that the superior part of the uterus, commonly called the *fundus*, in women with child, is most remarkably extended: in the body of a woman, who died in the fifth month of her pregnancy, Noortwyk^b found what follows: “The uppermost part of the womb was so remarkably expanded

² *Toto fere intermedio tempore oris ventriculi dolore subinde premittitur, ob ventrem undique complectentem fœtum, maxime vero ob uterum. De Mulier. Morb. lib. i. cap. 32. Charter. Tom. VII. p. 749.*

³ *Quæ in partu os ventriculi prædoluere, paulo post ejiciunt. Coacc. Prenot. n°. 547. Charter. Tom. VIII. p. 884.*

^b *Uteri Humani Gravidi Anat. p. 7, 7L.*

“ ded, that the Fallopian tubes, which, in women
 “ not with child, are naturally inserted laterally into
 “ the upper part of it, had now got down to a much
 “ lower situation ; for now a fourth part of the globe
 “ appeared above the parallel of their insertion.” The
 same also obtains with regard to what are called the
 round ligaments, which take their rise from the sides
 of the fundus uteri, where the tubæ Fallopiæ are
 attached to the uterus, and go down in a duplicature
 of the peritonæum towards the groins on both sides,
 then passing out of the abdomen run obliquely over
 the bones of the pubes, where they are covered with
 plenty of fat, and, being divided into a number of
 smaller, are there inserted near to the clitoris, and so
 entirely disappear^c. Thus, indeed, they are guarded
 from being too much distracted ; but yet, as the fun-
 dus uteri rises gradually, they seem to be in propor-
 tion elongated ; and, in some pregnant women, a
 troublesome pain arises in that very place above the
 pubes where these ligaments terminate : but seeing
 also that they are vascular, and that these vessels in
 women with child are observed more full, from thence
 perhaps this pain is produced^d. This pain, however,
 is mostly of one side only ; and it was the opinion of
 Levret, a celebrated author in midwifery, that these
 vessels were packed up, as it were, along with these
 ligaments, for this reason, because the placenta, when
 grown to the uterus, possesses that place of it from
 whence the round ligaments take their origin ; whence
 he thought, that, if each fœtus had its placenta, this
 pain could not take place in both sides, but only in the
 case of twins.

Such pains I have frequently observed in pregnant
 women, at these very places, go off in a little time,
 without leaving any ill effects behind. But there are
 also other pains of a similar kind, with which women
 with child are sometimes taken, in their thighs and
 legs, which appear not to depend on this cause. These
 pains, as Mauriceau^e observes, happen rather about
 the

^c De Graaf de Mulier. Organ. p. 147, 148.
 Accouch. p. 33.

^d Levret l'art des
^e Traite de Malad. des femmes grosses, Tom. I.

the first weeks of pregnancy; which rest in bed, or bleeding, if necessary, generally removes. It is very obvious however, that all these disorders may be much aggravated by the strong motions of the foetus stirring in the womb. Hippocrates, speaking of women near the time of delivery, says, *That then the loins are greatly pained; for even the loins are very much shaken by the stirring of the foetus* ^f.

Breasts.] Before, in discoursing on the diseases of virgins, we took notice of that remarkable communication and correspondence carried on between the uterus and breasts: among the signs also of pregnancy, a swelling in the breasts was recounted; which, if it is not very hard, and rather feels like a troublesome tension than pain, requires no application by way of cure: for it is held a good sign; and Hippocrates, as we shall see afterwards, presaged abortion to pregnant women from their breasts growing suddenly flaccid; and, on the contrary, had the most favourable hopes if they became again firm and turgid. But, as he believed the human uterus to have two cavities, of which the right bred and cherished males, and the left females; hence he thought, that according as the right or left breast grew flaccid, the sex of the future abortion might be easily known. Gentle friction, fomentations of milk and water mixed with a little Venetian soap, pretty well remove these uneasy complaints, particularly if any thing of a thin milky liquor run from the nipples. Mauriceau ^g also charges us to leave this to nature: he condemns all discutients, and orders them to beware of pressing the swelled breasts too much by wearing the clothes too tight about them; for from thence he apprehended, not without reason, the greatest mischiefs.

A torpor and sense of weight.] The uneasy, tho' dear load, weighs down the whole body, and renders women sometimes so weak, that in the last months of gestation they can hardly move a joint, especially if they

^f Tum maxime lumbis dolet; nam et lumbi a foetu percutiuntur. *De Mulier. Morb. lib. i. cap. 32. Charter. Tom. VII. p. 749.*

^g *Traite des Malad. des femm. gross. Tom. I. p. 137.*

they have been delicately bred up, and indulge their ease the whole time of their pregnancy; whilst no such inconvenience happens to the rural mother when she is with child, who

*Instanti cum plena tument quoque viscera partu,
 Æquat humum rastris, segetem nascentibus herbis
 Liberat, in longos religat sarmenta maniplos.
 Et dari patiens ita ruris, amansque laborum est,
 Inter ut agrestes operas enixa, marito
 Progeniem referat, quam non peperisse, sed agris
 Invenisse putēs^b.*

When her teeming bowels stretch'd out we see
 With ripen'd young that struggles to get free,
 Still guides the harrows o'er the furrow'd meads,
 Or from the sprouting corn destroys the weeds,
 Ties up the tender vines with studious care,
 Inured to rural toil and simple fare :
 And whilst there's nought but this her taste can please,
 Amidst her work she bears her young with ease;
 So that you'd think the offspring which she yields
 Her country spouse, were gather'd in the fields."

I have known sometimes a whole family in the utmost fear and apprehensions, lest the delivery, on account of the mother's weakness and inability to move, should not terminate so happily : but when the true labour-pains began to rouse her, all that indolence went off, and her strength, which had been suppressed, returning, a very successful and happy delivery has succeeded ; and although all about her were ready to beg something of a warm stimulating cordial to recruit and support her strength, yet I never consented to give any thing of that sort, knowing well it would rather do her harm.

Difficulty of breathing.] This is chiefly observed about the end of gestation, when the belly being so big, the diaphragm has not room to move downwards, and the abdominal muscles are so stretched out as not to be able to give their assistance.

Miscarriage,] Or abortion, so called from happen-
 ing

ing at an untimely period, is an exclusion of the foetus from the uterus before the due time; for, strictly speaking, a miscarriage may happen at the first time of conception: hence that other is called *ομοτοκίαν* by some, or *premature birth*: the Athenians, as Galen testifies, called it *αμβλωσιον*: but Hippocrates used to call it *απορροαν*, *losing* or *perishing*; because such untimely births usually came away dead, or if alive, died soon afterwards. Seeing, however, that the foetus which comes away before the seventh month, scarcely ever survives, physicians therefore comprehend all such births under the general name of *abortion*; but as we have many examples of children born in the seventh month, which not only have survived, but arrived to a good old age, hence such were no more termed *abortions*, but only simply *premature births*. In the very first beginnings of impregnation however, when the human ovum has no attachment as yet to the uterus, if, at this time, such an embryo escapes out of the uterus, the loss can hardly be known by any sign; whence it is thought by some scarcely to merit the name of abortion. For the most part, therefore, a woman is said to abort when she parts with the foetus any time from the end of the first to the seventh month after conception. And, seeing that through the whole of this space the foetus is united to the uterus, the vessels all enlarged and full of blood, it is almost impossible but that, either before or at the time of miscarriage, a greater or lesser quantity of blood must flow from the uterus.

Hence perhaps a miscarriage, or abortion, may be properly said to be an expulsion of an immature foetus, attended with a sanguineous flooding.

For we may fitly distinguish the times of abortion into three different stages. The *first*, when the union of the placenta with the uterus begins to give way. It is very well known, that the human ovum adheres to the uterus most firmly at the place where it is connected by means of the placenta, with which the large vessels of the uterus communicate; and, when this

con-

connexion is loosened, pour out a good deal of blood; which, increasing in quantity, gradually loosens more and more the still weaker attachment of the chorion to the uterus, till it begins at last to go out by its orifice: and this is called the *second* stage of a miscarriage. The *third* and last is, when the fœtus comes away before its due time.

Now, if we call back to our memory those symptoms which usually appear in the first months of pregnancy, it will at once appear, how frequently a destruction of this tender connexion of the fœtus with the uterus may be justly apprehended. Vomiting, or any shock to the abdomen alone, may produce this mischance; especially if not only a squeamishness and reaching, but strong and frequent fits of vomiting prevail; which, as hath been before observed at §. 652. may draw their origin, as a cause, from a convulsion not only of the muscular fibres of the fauces, gullet, stomach, and intestines, but also of the diaphragm and abdominal muscles; whence all the viscera contained within the abdomen are strongly pressed and shaken. The danger is greatly increased, if the vessels of the body, at the same time, happen to be full of blood.

From thence too appears the reason why abortions happen most frequently about the third month; to wit, because the connexion of the fœtus to the uterus is but feeble as yet, and in women of a sanguineous habit, who formerly used to have large menstruations, the uterine vessels are very turgid and full of blood.

We come now to consider by what method, or medicines, these symptoms may, if not entirely removed, at least be lessened, or mitigated; for it will very soon appear, that to obtain this end a good deal of caution and prudence will be extremely necessary.

§. 1297. **W**HICH, as far as they depend upon one cause, are usually removed by the same remedy, namely, by bleeding.

As the cessation of the menses was reckoned among the principal signs of being with child, hence all the disagreeable symptoms of breeding have been ascribed by some to a retention of this blood; and so they concluded that no remedy could be more immediate, than to take that away, by opening a vein, from which they imagined all those symptoms arose. But, from what has already been said, it appears, that there is not in every woman so great a quantity of menstrual blood evacuated, as, when retained immediately in the beginning of conception, can give any one the least apprehension. Besides, it clearly appeared, that many of those symptoms, usually reckoned among the signs of conception, had already taken place, before the quantity of blood could be any way increased from the retained menses: for it is customary with some women to conceive the very first days after the menstrual period goes off; and in many the nausea, and reaching, and appetite for strange things, immediately appear. Neither do all the symptoms of breeding seem easily to be deduced from an increase of the blood alone, as the like symptoms are not observed in people of a plethoric habit of body. But it was also shewn, that this retained blood was expended in filling the enlarged vessels of the uterus as it increased; and for this reason there could be no immediate superfluity, even though it was too much for the tender embryo to consume.

But here it seems highly necessary to pay due attention to the regulation and intention of nature, which every physician ought to co-operate with, not controul. In a sound healthy woman, the menses flow at periods; when she has conceived, they stop. Were the retention of this blood, within the body of one that is pregnant, to be attended always with danger, the wise Creator would have substituted other outlets by which it might be carried off. Those pregnant women, besides, who would by no means allow of bleeding, must have been liable to more troublesome complaints than others. My own wife never had a vein opened with a lancet in her life; yet she never
mis-

miscarried; and brought forth six healthy children, and always soon recovered from child-bed. The same I have observed in many others: hence I may also conclude, that blood-letting in every woman with child is not necessary; nay, nor always proper; and sometimes does harm.

I am far from being of opinion, however, that in pregnant women a vein is never to be opened. Many I have seen, who, either on account of fulness, or sudden rarefaction of the blood, required bleeding very much. Those women, who are accustomed to have a large monthly discharge when they were not pregnant, feed on a rich luxurious diet, and take but little exercise, are in the first or second months of conception frequently plethoric, and swelled up with too great a quantity of blood: to such, as soon as I observed these signs of a plethora, I never hesitated to advise bleeding, well knowing how ready otherwise they must have been to miscarry. In others, through a violent fit of anger, I have seen all the vessels filled in a moment and swelled out, the face red and tense, and the eyes blood-shot: here bleeding was also of service. From all this I would only mean to inculcate, that it should not be held a general rule to bleed during the time of pregnancy, nor that all the uneasinesses, all the bad consequences which sometimes attend it, should, with any kind of reason, be attributed to a neglect of this remedy. It has been a long standing opinion, in several places, particularly in some families of distinction, that in pregnancy a vein is to be opened at three different times, to wit, in the beginning, about the middle, and towards the end, without regard to constitution, or habit of body. This I have seen done in pale tender women; and although they have cruelly languished, from that very cause, during the whole time of pregnancy, and have at last brought forth a weakly, sickly, and infirm child, being whole months confined to the bed before they were able to appear abroad, yet, with the greatest difficulty, could I prevail with some, and those indeed very few, to lay aside this pernicious practice for

the future. Physicians themselves, too attentive to their own reputations, have not the courage to oppose this torrent; well knowing, that if any thing unsuccessful happen afterwards, it would all be ascribed alone to the omission of bleeding: on the other hand, when they are bled according to custom, the physicians are declared free from all blame, whatever should happen afterwards.

In the mean time, however, we have the weighty authority of the very best physicians to admonish us, that we are to proceed in this matter with great caution: Hippocrates has said ^k, as quoted before, “A woman with child, from opening a vein, is apt to miscarry, and the more so in proportion to the bulk of the foetus.” And Galen is of the same opinion with Hippocrates; especially when the foetus, grown bigger, requires a larger share of nutriment. Moreover, as a great quantity of blood usually flows out in delivery, when the placenta is brought away, and the lochia for several days go on to empty the uterine vessels, it may be asked, whether bleeding a little before may not be of use to lessen the excess of flooding. I know it is said, that by this means too great a quantity of blood is hindered from coming away from the uterus in bringing out the placenta: but neither is this opinion very probable. For the vessels which come from the uterus into the placenta are so large, that, when this connection is once disjoined, the blood must necessarily flow out in great abundance; which the uterus, now disburdened, by its contraction, still urges on the more: nay, were not this the case, the worst of consequences would often follow, as shall be more fully demonstrated afterwards, in the chapter on the diseases of child-bearing.

It must be confessed, that this aphorism of Hippocrates does not altogether and absolutely hold true, because daily experience and observation shew, that abortion does not always happen after bleeding a woman with child. Whence Celsus ^l very wisely fixes the

^k Aphor. 31. sect. 5. Charter. Tom. IX. p. 213.
cap. 10. p. 77.

^l Lib. ii.

the just bounds of this opinion of Hippocrates : for, in treating of venæsection, he remarks, that the ancients in their practice never used to bleed children, old men, or women with child; “ seeing the ancients “ thought that the first and last stages of life could “ not bear this kind of remedy, persuading them- “ selves also that a woman with child, treated in this “ manner, would certainly miscarry. Afterwards, “ however, experience proved that none of these “ rules were universal, and that some other circum- “ stances were rather to be regarded, which may di- “ rect us in the true method of cure; for it is not so “ material what the age may be, or what is contain- “ ed within the body, but what the degree of strength “ is.” These then will shew the physician what is to be done with regard to pregnant women; nor will he by following this rule be so apt to commit a mistake. For if a woman with child looks pale and languid, he will carefully abstain altogether from bleeding: On the contrary, if she looks red, is warm, and the veins swelled out; if there is a head-ach, running at the nose, and she perceives a tension about the loins, pelvis, and groins; then he will open a vein to prevent a miscarriage, that may very well be apprehended from too great a plenitude of the vessels; always however, and even here, carrying in his mind these prudent admonitions of Celsus^m: “ For in a “ pregnant woman, after the removal of the disorder, “ there is strength not only requisite to herself, but “ also to support what is in her womb: nor are we “ to make any evacuation, without the greatest pru- “ dence and consideration, since in this our art prin- “ cipally consists, which regards not the number of “ years, or the time of conception alone, but esti- “ mates the strength of the patient, and from thence “ considers, whether or not there may afterwards re- “ main what is sufficient to support either a child, an “ old man, or two bodies in one woman.”

It seems plain from the whole context of Celsus, that the dispute was only, Whether, in case of dis-

feases, it was right to bleed women with child; not, Whether the same was necessary in sound, healthy pregnant women. But as Hippocrates expected no less than abortion from bleeding women with child, which yet is so necessary in acute diseases; hence, perhaps, the reason why he lays it down in the aphorism precedingⁿ, “That an acute distemper of
“any kind, seizing a woman with child, generally
“proves mortal.” That pregnant women are in great danger in acute diseases, is not to be doubted; seeing, on account of the fœtus, there must be greater nicety in the management and cure, as Galen^o very well observes in his commentary on the text: for whilst food is necessarily exhibited to the mother in smaller quantity, and at longer intervals, there is great danger of the fœtus perishing for want of aliment; and if a greater quantity should be given, and more frequently, the danger is, lest by this improper diet you increase the fever, and thereby destroy the mother. Pregnant women, however, do not always perish when taken with acute diseases, as appears even from the testimony of Hippocrates himself^p: For the woman who lived on the sea-shore, was seized with an acute fever in the third month of her pregnancy, and immediately complained of pain in her loins. On the third day she had a pain in her neck, head, collar-bone, and soon after became speechless, delirious, and was convulsed. She had no sleep. The urine was thin, and of a bad colour. There were other bad symptoms, yet she recovered by a bilious vomiting and sweat on the fourteenth day. Whence Celsus limits likewise this prognosis, saying, *A woman with child is easily taken down by an acute distemper*^p.

I have seen some physicians very much afraid of bleeding pregnant women in acute diseases, merely from the authority of these aphorisms; or if they have ventured, it has been too sparingly, though the disease

ⁿ Aphor. 3. sect. 5. Charter. Tom. IX. p. 213.

^o Ibidem.

^p Epidemic. lib. i. ægrot. 13. Charter. Tom. IX. p. 115.

^q Mulier quoque gravida acuto morbo facile consumitur. Lib. vi. cap. 6. p. 55.

ease required plentiful and repeated bleedings. This, however, I have known done, from my own experience, with the best success. One woman, six months gone with child, who was seized with a violent pleurisy, I cured successfully with three repeated bleedings in the space of four and twenty hours, who was afterwards happily delivered, at the full time, of a very healthy child. In another, who was thrown down, in the last week of gestation, with an acute fever attended with intense pain of the left side, I twice opened a vein; and, in four and twenty hours after the last bleeding, she was delivered of a healthy girl, and recovered very well both from the disease and from the child-bearing. Cases of the same kind, where bleeding has been of the greatest success in acute distempers of women with child, may be seen in Forestus, Stalpart van der Wiel, and other practical authors.

From these, in my opinion, it is sufficiently apparent what sentiments we are to entertain with regard to this aphorism of Hippocrates which forbids all venæsection during pregnancy. That it is sometimes requisite in acute diseases of women with child, and that it has also been administered, is confirmed by repeated and certain observation. We cannot however conclude from thence, that, in healthy women with child, bleeding is always necessary.

When all the signs of a plethora appear, and women have been accustomed to large menstrual evacuations, every one agrees, that bleeding in that case may not only be useful, but likewise necessary; but, if otherwise, Mauriceau^s forbids it indeed, even where the blood in pregnancy comes away from the vagina, after the manner of the menses. La Motte^t, who is so very candid in the relation of what he observes, only allows of bleeding in pregnancy when women are very plethoric: yet he also allows it when they long for strange things, and loath at all good aliment; or when they are much afflicted with nausea and vomiting, feel a great debility, and when blood comes away from

G g 3 the

^s Traite des Malad. des Femmes grosses, liv. i. chap. 20. p. 156, 157.

^t Traite des accouchem. liv. i. chap. 15. p. 64, et seq.

the vulva. But from what has been already said it is plain, that these symptoms cannot always be attributed to a fulness of blood, and therefore cannot always require the opening of a vein.

He concludes, however, that if a woman with child be well and in health, bleeding must not only be unnecessary, but really hurtful.

§. 1298. **I**N the directing of which, however, the greatest regard must be had to place, time, and quantity.

Place.] Seeing venæsection, in the first months of pregnancy, is only employed with a view to lessen the too great quantity of blood, this end therefore may always be obtained, whatever vein is opened. But as it was before observed, at §. 1291. that bleeding at the foot was of principal use in forwarding the menstrual flux, and for that very reason generally recommended; it is very obvious, why, on the contrary, it is condemned as hurtful to pregnant women, seeing there would be danger of a miscarriage, should the blood again begin to flow from the uterine vessels. Hence bleeding during pregnancy, by the consent of all authors, must be performed in the arm. However, although the force and quantity of the humours may be derived to the lower parts of the body by venæsection performed in the feet, yet the blood, in this case, seems to pass more freely through the external iliac artery, which does not give so many branches to the uterus, and presses less upon the internal iliac, which provides the uterus: and frequent experience teaches us, that wicked women, who are with child, in order to destroy the fruit of their clandestine amours, do often, under pretence of obstructed menses, try bleeding at the feet, yet all to no purpose. In the mean time it is always right to go the safest way to work, and therefore to prefer bleeding at the arm, when too great a congestion of blood about the vessels of the uterus is in any shape to be apprehended. *For we must, by all means, endeavour to open the veins at as great a distance as possible from where the* pains

pains are, and where the blood used to be collected: for thus too great and sudden a change will not be so readily brought on; but, by a gentle and easy translation, it may be so ordered, as not to fall any more upon the same place in too great a quantity^u.

Time.] If an acute inflammatory disease requires bleeding, a vein may be opened at any time whatever during pregnancy, as hath been said in the foregoing paragraph. But as we are here speaking of that particular evacuation of blood designed to guard against the danger of abortion from a plenitude, and to correct those disagreeable symptoms usually attending on the first beginnings of conception, it is therefore very evident, that in this case it must be in the first months that bleeding chiefly takes place: for, after the third month, the nausea, vomiting, and all the other symptoms of breeding, diminish; nay, sometimes entirely cease. Besides, after this time, the size of the uterus is greatly enlarged, and its vessels require a greater quantity of blood to fill them: the foetus too, growing bigger, stands in need of a greater quantity of nourishment. In those of a full habit, who have been accustomed to have large menstruations, it is sometimes requisite to open a vein at the first stopping of the menses; yet in a case of this kind it is more frequently done after the second period, or, if the signs demonstrate a fulness of blood in the body, and that the uterine vessels are much distended and pressed, in the ninth or tenth week after conception: for abortion happens more frequently at this time; not so often in the fourth month; and after that very seldom, unless by some violent disease, or external hurt, such as a fall, or stroke on the belly; or from some strong violent passion of the mind, which ought to be guarded against with the greatest care. Should the signs of plenitude again recur, for the same reason the bleeding is to be repeated; but I have seldom met with cases in my practice.

^u Danda est autem opera, ut quam maxime procul a locis, in quibus dolores fieri et sanguis colligi solet, sectiones faciamus: sic enim minime magna mutatio repente continget, et translata consuetudine efficiet, ut ne amplius in eundem locum colligatur. Hippocrat. de Off. Natura, cap. 5. Charier. Tom. IV. p. 3.

practice where many bleedings were necessary. Some, however, I have had occasion to see, who, being accustomed to luxurious feeding, and of a sanguineous habit of body, and liable to be easily put in a fit of anger on the least trifling occasion, in these it has been necessary to bleed four, nay, five times, in order to prevent a miscarriage. From the signs of a plethora a prudent physician can easily judge when it is necessary to make this evacuation.

Quantity.] That is sufficient which lessens the plenitude, without impairing the strength. When this is observed, the patients feel themselves brisker after bleeding; but if there is too much taken away, they grow languid. Hence Manningham^w cautiously admonishes, even in diseases of women with child that seem to require bleeding, to take care, “ that too great a quantity of blood be not taken away at one time; seeing the same effects will for the most part follow, when it is done in smaller quantities, at proper intervals, and the disadvantages arising from inconsiderate bleeding are not so easy to remedy.” The physical art is always more successful in taking away what is superabundant, than in restoring what is deficient; “ for cordial potions avail little, in recruiting the strength that has been lost by an improper and unseasonable evacuation of blood^x.” Whence this ingenious gentleman lays down this caution: “ Whenever you shall have occasion to prescribe bleeding, especially in doubtful cases, put your finger immediately to the patient’s vein as soon as the incision is made, and observe whether the strokes, whilst the blood is flowing out, are stronger or weaker; and this you may do, by careful attention, before an ounce be allowed to come out. If the strokes are pretty strong, you may safely proceed; if not, or should they be rather languid, it will redound very much to the patient’s hurt, unless you presently put a stop to the evacuation.” Celsus^y has made a remark some-

^w Artis Obstetric. Compend. p. 91.

^x Ibid. p. 22.

^y Vis corporis melius ex venis, quam ex ipsa specie, aestimatur. Lib. ii. cap. 10. p. 78.

something a-kin to this, where he says, *The strength of the body may be better estimated from the veins than from the size or figure itself.*

§. 1299. **H**ERE also a thin diet, well-timed exercise, and light drinks, are of the greatest service.

Thin diet.] All the abdominal viscera, which retain the aliments, and change them into chyle, are moved out of their proper place by the swelling uterus, and sometimes, as pregnancy advances, are greatly compressed. In the beginning of conception too, there is often a troublesome nausea, which greatly disturbs the action of the stomach. For this reason the diet should consist of meats that are easy to digest, broths made of the tender flesh of young animals, fresh-water fishes, new-laid eggs, tender pot-herbs, and well-leavened bread. It is also best to eat little at a time, and frequently. Fat meat and eatables prepared of unfermented grain are strictly to be avoided. However, in the diet of women with child, regard must be always had to custom, as they bear the meats, which they are used to, more easily; neither are they always to be rigidly opposed, even when they desire those sorts of meats which do not appear altogether so wholesome and proper. See what has been said at §. 599, 602.

This rule of diet is frequently transgressed by mothers, who are oft-times too solicitous in cramming women with child, even against their own inclination, with rich soups and other cookery, which, in a small quantity, contain a great deal of nutriment; imagining, no doubt, that all possible means must be used, not only to nourish the mother, but likewise the child within her; but, in fact, the stomach is rather loaded with a quantity of this sort of food, than the body nourished.

With regard to seasoning, all hot spices, and every thing acrid and sharp, are to be avoided; or at least, if the person has been long accustomed to them, to be taken sparingly: for a mild soft disposition of the mother's.

ther's humours is of great advantage to the child in that tender condition.

Well-timed exercise.] It was before observed, how easily women in the country bring forth children, hardly ever laying aside their daily work, until they feel their labour-pains: but this cannot take place in women bred in a delicate way. Here walking is of service, particularly in a pure, serene, country air; but not so, however, as to fatigue. A carriage, unless hung on springs, is not so safe; nor are journeys by any means proper for pregnant women, for fear of accidents. Ascending a steep path, as it fatigues, or going down a declivity, as it can hardly be done by big-bellied women without danger of falling, are both carefully to be shunned. Violent dancings are in a particular manner improper, as from thence very violent hæmorrhages and abortions so frequently happen. In like manner, all violent strainings are to be avoided, as lifting up a weight, removing any obstacle, &c. for by such attempts many women have miscarried. I once saw a very worthy lady miscarry, from endeavouring suddenly to lift up her little son who had fallen down.

Light drinks.] Pure water is a very proper drink to those accustomed to it, nor could I ever perceive any hurt from the use of small beer. A little wine may be safely mixed with the water for common drink. Nor is it unusual to allow, just after dinner, a glass of some generous soft wine, with a little biscuit, or toasted bread, especially if the stomach be disordered. This, however, ought to be allowed with some caution to women of a warm sanguine constitution. But drink which is very cold, or made cold by ice, if given to women with child, as Manningham observes, "frequently occasions a colic, or brings on an abortion^a."

§. 1300. **I**N the mean time, aromatic cordials, together with the mildest antihysterics,
or

^a Manningham Art. Obstet. Compend. p. 65.

or even some of the gentle sub-acids, are of the greatest use and efficacy.

Most women with child are more or less sickly and faintish, particularly in the first months of their pregnancy. Those too whose nervous system is very sensible, and easily irritated, are frequently seized with hysteric fits; whence physicians, of all remedies whatsoever, have perhaps contrived none better than agreeable aromatics, which by their fragrancy have a power to remove this languor, and to restore vigour to the solid fibres which have been too much weakened, as also to compose at the same time the disorderly commotions of the nervous system. Hence cinnamon, which obtains the first place among aromatics, is so often in this case recommended; for, together with its agreeable fragrancy, it has a considerable strengthening quality. On this account, also, the *powder* of cinnamon infused in wine, and the *tinctura*, are preferable to all other preparations of this aromatic, which retain all its fragrancy indeed, but are destitute of the strengthening quality: such are the essential oil of cinnamon, distilled water, or even the strong spirit of cinnamon; all which are indeed very fragrant, but the whole strengthening power remains in the residuum after distillation, not being able to pass over the alembic along with the volatile odour. Orange and citron pills are also of mighty use here, are very grateful to the stomach, particularly that of oranges. Their juices too, mixed with food, by way of seasoning, restore a lost appetite, and at the same time resist putrefaction. Jelly of currants, marmalade of quinces, and barberries, are for the same reason recommended to pregnant women. There are various formulas of this kind in our author's *Materia Medica*, more or less aromatic, suited to the different constitution of the patient.

To compose the hysteric affections, castor, amber, their tinctures, &c. are of great use; but they must be given in a small dose, as they are ranked amongst the emmenagogues.

§. 1301. **F**ROM the increase and bulk of the foetus seem to arise the same symptoms with those enumerated at §. 1296. as also the difficulty in making water and going to stool, the piles, varices, a swelling of the feet, and of the lips of the uterus, with a readiness to fall down.

It was before remarked, that all the symptoms of pregnancy could neither be clearly understood, nor explained, from the retention of the menses, nor from the size and bulk of the foetus, secundines, and waters, which, in the beginning of pregnancy at least, were exceeding small. Whence also it was observed, that many of the symptoms, attending the first beginnings of conception, very much abated, or sometimes entirely ceased, after the third or fourth months. But those uneasy symptoms, which arose from the increased size of the uterus containing the foetus, were rather augmented all the time till the end of gestation: for if, as we took notice before at §. 1295, the bottom of the womb, in that woman who died in the sixth month of her pregnancy, was found to touch the bottom of the stomach, and the intestines were pushed upwards and to each side, so as nothing remained between the uterus and back-bone, and that the anterior part of the swelled uterus was also in close contact to the naked peritonæum; it is very evident, that during the remaining months of gestation, this pressure upon the viscera must have still gone on to increase along with the farther extension of the uterus. The motion of the diaphragm is by this means rendered more difficult, and sometimes by the irritation is seized with a cramp; and thus a true spasmodic asthma is produced, which returns by fits, especially if the stomach at the same time shall happen to be swelled either by food or flatulency. I have observed this in a woman, who, immediately upon delivery, was freed from the uneasy complaint.

But what contributes much to alleviate the uneasiness

fineness of these complaints is the gradual increase of the size of the uterus in pregnancy, whereby the situations of the viscera are changed by gentle and equable degrees. But it sometimes happens, that the fundus uteri does not ascend in a straight line, but inclines to one side or another, as shall be shewn in the following chapter: in that case the pressure of the uterus will be more unequal, and may considerably aggravate these complaints. Does not Hippocrates point out some thing like this, when he says, *In women with child a pain about the hypochondrium is bad?*^a We have frequently on other occasions remarked, that when Hippocrates puts this word in the singular number, he always means the right hypochondrium. Now, if the bottom of the womb shall ascend obliquely towards the right side, it will press the bulk of the intestines towards the concave part of the liver, where the gall-bladder, biliary ducts, and trunks of the vena portæ, are situated; whence it is easy to see what a number of disorders may readily happen, and are justly to be apprehended, from a pain in the right hypochondrium during a state of pregnancy.

[Difficulty in making water.] Here we only speak of that difficulty in making water occasioned by the growth of the fœtus and increased size of the uterus, and which is principally to be observed in the last months of gestation; for, during pregnancy, a difficulty of urine may arise from other causes, which have no relation to this particular situation. Thus I had occasion to see a certain woman of thirty years of age, in her third month after conception, suddenly taken with a very troublesome dysury, without any apparent preceding cause: a few hours after, the upper parts of the pudendum, towards the urinary passage, began to be painful and swelled: she was blooded; the softest remedies were employed, both externally and internally; from which indeed she received some relief, but that pain which began about the urinary passage dispersed itself over the whole abdomen:

VOL. XIII.

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domen:

^a Prægnantibus hypochondrii dolor, malum. *Coac. Prænot.* n^o 523. *Charter. Tom. VIII. p. 883.*

domen: the sixth day she could hardly lie down, but was obliged to sit up erect in bed: at the same time she was sensible of a violent pain about her right kidney; and the urine came away sometimes easier, and sometimes with greater difficulty; the pain about the kidney continued sometimes milder, and at other times grew more violent: at last, after six weeks were elapsed, she passed by urine a quantity of pure equable pus, with a sudden relief to the pain about the kidney: she went on for a considerable time to pass this purulent urine, and at the end of the fifth month was delivered of a dead foetus. She afterwards refused to take those remedies advised as proper for the ulcer in her kidney: the quantity of pus in her urine lessened indeed; but then she began to be emaciated, and to have a cough and purulent spitting, and, gradually worn out with consumption, she at last expired.

Such disorders as these may happen to women with child: but a free passage of the urine may also be hindered even by the size itself of a gravid uterus; for the bladder lies just over the uterus^b. Hence, when this last is swelled up, it may so compress the bladder as to hinder it from being sufficiently distended, and thus a woman with child is obliged frequently to make water. But if the neck of the bladder happens to be compressed, the free passage of the urine is obstructed, and part of the urine, remaining long in the bladder, is by its stay rendered still more acrid, and continually irritates; and thus occasions a most disagreeable strangury, which chiefly uses to happen in the last months of gestation, when the bladder sometimes is so far depressed as to make a considerable angle with the neck. An instance of this Mauriceau had occasion to observe^c in a pregnant woman, who frequently, during the three last months, had to force out her urine, and with so much pain as if she had been afflicted with the stone or an ulcer in the neck of the bladder; but after delivery all these uneasy complaints were immediately removed.

Brudnell

^b Mauriceau *Traite des Malad. des Femmes Grosses*, liv. i. chap. 15. p. 138.

^c *Ibid.* p. 139.

Brudnell Exton ^d, an eminent author in midwifery has observed the same thing happen in the fourth and fifth months of pregnancy, when the gravid uterus fills up the hollow of the pelvis, but has not as yet raised its bottom much above the bones of the pubes. But this more particularly happens to women whose neck of the uterus comes lower down into the vagina, as is frequently the case with those who have had a falling-down of the uterus, whether completely so, or only beginning; for notwithstanding the uterus may not project without the vulva, but only fill up the vagina, yet it may sufficiently compress the neck of the bladder so as to hinder every drop of it from passing that way. We have an account ^e of such a case, where the catheter could not by any means be introduced into the bladder; but, upon reducing the uterus that had fallen down, the vast quantity of urine, with which the bladder had been distended, came away of itself.

This difficulty of urine seems, of all, principally to molest those women with child, whose uterus, whilst their belly hangs very much forwards and downward, sliding forward above the bones of the pubis, causes the bladder to form an angle with its neck, and thus hinders the free passage of the urine, and at the same time renders it very difficult to introduce a catheter into the bladder. It has been observed that the bladder in women with child, distended by such a supression of urine, has produced tumours in the groins, and in the perinæum; that is, a genuine rupture of the bladder, concerning which, see Academia Chirurgica Parisiana ^f, where such cases observed in women with child are fully related. Perhaps the following passage of Hippocrates has some relation to this ^g: *Sometimes, also, when a woman has suffered a considerable evacuation from her vessels, and several other unea-*

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sinesses^d System of Midwifery, p. 144.^e Levret sur les polypes,

p. 112, 113.

^f Tom. II. p. 23. & seq.^g Interdum etiam, ubi mulier vasorum vacationem passa fuerit, ac præterea laborarit, uteri conversi ad vesicæ osculum procumbunt, & stranguriam inducunt: nullum autem alium habet malum, & curata brevi convalescit, nonnunquam etiam sponte. *De Mulier. Morb. lib. i. cap. 10. Charter. Tom. VII. p. 735.*

finesses besides, the uterus, turned upon the orifice of the bladder, lies above it, and brings on a strangury: but she has no other inconveniency; and being cured, recovers very soon, and sometimes without using any remedy.

And going to stool.] When the gravid uterus swells up, all the intestines are pushed up, and give way on each side, where they are more or less compressed in proportion to the straitening of the cavity of the abdomen. But as the contents of the smaller intestines are of a softer consistence, their passage through them is not so much obstructed. It is in the larger intestines that the thicker part of the aliments resides; where the thinner part being taken up by the absorbent vessels, what remains becomes still of a harder consistence, till it is at last expelled by the anus. The latter part of the colon, every one knows, before it terminates in the rectum, ascends upwards, then bends inwards, then goes straight down again into the pelvis, where it obtains the name of the *rectum* or straight gut. Now the bulk of the uterus, when swelled up, particularly presses upon this place, where of itself, even in women not with child, it is very apt to retard the passage of the fæces; and therefore no wonder that we see the belly so often astricted during pregnancy. Great care, however, ought to be taken that the belly remain not too long so, because the excrement is more and more dried up, gathers in greater quantity, and hardens; whence it is not without the utmost difficulty that they can afterwards be expelled by the anus, which sometimes has been the cause of a miscarriage: for if only part of the indurated fæces come away, the rest, by degrees, accumulate, all the larger intestines are blocked up with fæces; and especially the intestinum rectum is dilated into a huge sac, such as was found in the body of that young patient, about fifteen years of age^h, who had laboured under an astricted belly so long, that in the space of twenty days she had only gone once to stool. It is remarked at the same time in that very place above cited, that with many, who were long afflicted in the same manner,

^h Académ. des Sciences, 1750. Hist. p. 48.

ner, it was necessary to have recourse to various means, whether by the fingers, or even with instruments, to extract the indurated fæces.

Nor is it only the intestinum rectum that is liable to be so distended by a retention of the fæces, but the like dilatation may happen through the whole length of the colon. I was once called, a great while ago, to an English woman, who had brought forth her child in a very easy and happy delivery, and who, for the first days of her lying-in, felt no inconveniency whatever; but on the ninth day after her delivery, altho' she had gone four times to stool during this space, she began to complain of an obtuse pain and weight about the os sacrum, together with a tenesmus or painful but fruitless attempt to go to stool: glysters were injected, but returned immediately; oil was given in great abundance; decoctions of the mildest kind, with honey and liniments, were applied to the anus and neighbouring parts: at length the indurated mass of excrement came downward, and began a little to open the anus, insomuch that they attempted to lessen the bulk by picking part away with an instrument: at last, after the greatest distress, pain, and agony, endured for two days together, this enormous mass of indurated fæces was excluded, and equalled at least, if not exceeded, the head of a ripe foetus in bulk and largeness; and notwithstanding so great a mass could not pass without tearing the anus considerably, yet with the assistance of a skilful surgeon she perfectly recovered.

It is very plain that this lump of hardened fæces had been gathering during pregnancy; yet neither lay in the intestinum rectum, nor in the end of the colon, otherwise it must have obstructed the delivery; but a little higher, and had come down when the colon was gradually dilated after child-bearing. At the same time it must be remarked, that such a large collection of hardened fæces may distend the large intestine, and yet not fill it up so close but that some of the softer excrement may pass by, carrying some of the lump along with it, and forming afterwards into a proper

figure and consistence in the other part of the intestine, may at last pass out of the belly without much uneasiness.

Whence authorsⁱ, who have wrote concerning the diseases and cure of pregnant women, are at the greatest pains to caution against too astricted a belly during the time of pregnancy. But as the frequent use of purgatives is not so convenient to women with child, hence emollient and lubricating clysters have been recommended; particularly when thrown up by means of a syringe; for then they go farther up the intestines, than when administered only by means of a bladder: suppositories are also recommended, which by their stimulus not only irritate the rectum, but likewise the colon, into a contraction: by which means the fæces are stirred on from their place of lodgment, especially if the intestine has been previously lubricated with an emollient and oily clyster, and the hardened excrement somewhat softened; for in that case they will come down with less difficulty, and without much straining be expelled by the anus. The same author thought it a matter of such importance, that he would not have a physician trust even the account of the patient herself or nurse, but that he should inspect the quantity of fæces with his own eyes, nor leave off the use of these remedies until the excrements should come away in a softer consistence.

Piles.] That the swelling of the uterus presses upon the iliac veins, and so makes the return of the venous blood from the parts below more difficult, has been already observed: hence it follows, that the veins will be swelled out; and even the arteries, when they cannot so easily empty themselves into the veins already too full. This is the reason that the piles happen so frequently during the time of pregnancy, and more especially in those who have formerly been accustomed to suffer from them; for these vessels, having been once dilated, easier give way, and swell upon the smallest weight of blood bearing down upon them. This cause is considerably increased from the hard fæces,

ces, gathered about the end of the colon, compressing the vessels; as also from the size of the uterus, when tumefied, pressing upon the same parts of the intestine. Nay, even about the neck of the womb, and towards the orifice, the vessels are sometimes observed to swell like piles, as hath been remarked on another occasion at §. 1286.

Varices.] From the same cause arise varicous swellings in the legs and thighs, the veins rising up into knots about the places where the valves are situated. These varicous tumours usually go down after sleeping, as then the horizontal position of the body hinders the enlarged gravid uterus from pressing so much upon the iliac veins: for this reason, women with child are advised, several times through the day, to lay themselves along upon a couch, with their legs in a horizontal posture, that so the venous blood may return with more ease towards the heart. In the meantime, particular care must be taken not to change the situation of the body too hastily, lest the venous blood, collected in the swelled veins, return too suddenly to the heart, and oppress it; whence a fainting fit may be apprehended, as has been said at §. 1296. From varicous swellings we have this in particular to be afraid of, lest the veins, by being long stretched out, lose at last all their strength (see §. 25, n^o 3.) and, bursting at length, should produce a very dangerous hæmorrhage: besides, the blood in varicous swellings stagnating, through time may become more acrid, and erode the coats of the veins; which, though it may not happen during the time of pregnancy, yet may sometimes be the case a long time after, in women who have frequently brought forth children; in some of whom I have seen the varicous swellings exceed the size of one's thumb, which have at length bursted asunder with a very profuse hæmorrhage, and afterwards degenerated into a kind of ulcer exceeding difficult to heal. After delivery, when the uterus is emptied and contracted, the cause of the veins being distended is removed; hence, in a short time, they return to their former dimensions, unless they have been

been so much distended as to lose all their contractile power. To prevent this, a lying posture is necessary, and gentle friction in the morning, and afterwards applying a bandage upon the swelled veins, so as not to press the veins too tight, but only to support and strengthen the relaxed vessels, and hinder them from being too much distended: to this it is necessary to begin the application of the bandage at the inferior parts, gradually advancing upwards; and, at the same time, it ought to be of a sufficient breadth, that the pressure may be more equal.

Swelling of the feet, and of the lips of the uterus.] It was formerly proved at §. 1228, 1229. when treating on the cause of a dropfy, that a compression of the larger veins might produce that distemper; whence it is no wonder, that, when the iliac veins are compressed, an anasarca should fix upon the feet, legs, and thighs, as also upon the lips of the uterus. If from the situation of the uterus, or the iliac vessels, it should happen that the vessels of one side should be more compressed than those of the other, then this dropfical swelling will only appear on the side which is compressed.

These oedematous tumours, however, of the joints, at the lower extremities, are not so very alarming, as after delivery, when the cause is removed, they usually disappear without leaving any bad effects; more especially if the stagnating lymph be set in motion again by means of gentle friction. These tumours are also frequently dissipated by promoting the urinary evacuations, or by watery stools, or by sweating; after which it is necessary to strengthen the parts by bandage: and thus, in a few days, the disorder may be wholly removed.

We are assured by La Motte^k, that, however large these oedematous swellings might be, he had never seen any woman with child, or even after delivery, carried off on their account, unless they had been accompanied with a vast loss of blood, or convulsions at the same time, or some other uncommon symptoms.

For

^k Traite des Accouchemens, liv. i. obs. 42. p. 79—82.

For when a tumour of this kind arises from a compression of the veins, it is usually diminished after lying down and after sleep, and chiefly appears in the last months of pregnancy: after delivery, the cause being taken away, an easy cure may very well be expected. It is far otherwise when hydropic symptoms arise in consequence of too large evacuations of blood, (see §. 1229.): for when the placenta, after delivery, comes away, and the blood afterwards pours out by the lochia, the cause of the dropsy in that case is rather increased than diminished.

There is more appearance of danger when the lips of the pudendum swell, and are oedematous, lest it should obstruct the expulsion of the foetus: but oedematous tumours of this sort easily give way; and I have seen a woman, who had these parts immensely swelled, nor would take any thing by way of remedy for it, go through her child-bearing very successfully, notwithstanding the midwife, terrified with the greatness of the swelling, had given over all hopes.

Nor yet is the cure of this disorder so difficult: for, by slightly scarifying the lips of the vulva, the watery lymph runs out, and the swelling is quickly diminished. A blister may also be applied with very good success, so as partly to lie upon the swelled lip of the vulva, and partly upon the adjacent place of the thigh¹.

But the danger is more imminent, and of a much more doubtful nature, when the lips of the vulva happen to be seized with an inflammatory swelling, attended with a fever, especially when the term of delivery is near: for the interior parts of the vulva are, for the most part, inflamed at the same time; and, by the most skilful practitioners in the art of midwifery, women affected in this manner are all observed to die soon after delivery.

It is very well known, that parts when inflamed, if they shall be hard pressed, or rudely handled, very quickly become gangrenous: this, therefore, may with justice be apprehended, when the child's head, in time of delivery, presses and squeezes these inflamed parts,
and

and sometimes even lacerates the swelling.

Readiness to fall down.] The belly, in women big with child, naturally inclines forwards, and so much more indeed the nearer they are to their time of delivery; therefore they are obliged to walk with the trunk of their bodies bent bakward, in order to maintain the centre of gravity. The buttocks in women being, *cæteris paribus*, more fleshy, and the os sacrum jutting out more backwards, help to preserve the equilibrium of the body in women with child; however, upon striking their foot upon the least obstacle, they fall directly forwards; hence it were to be wished, that, in walking, they would make use of a staff, for then their falling might be more frequently prevented. It ought, at the same time, to be recommended to them, that they would wear low broad-heeled shoes, and shun going up and down stairs; or at least walk slowly, and with great caution: for, in women with child, there is the greatest danger to be apprehended, from a fall, of a violent flooding from the uterus, and miscarriage.

But seeing all the inconveniences, just now enumerated, arise from the increase of the foetus, and enlargement of the uterus, these must be considerably aggravated when the uterus happens to contain two foetuses, or even more; which however, is seldom the case: whence Mauriceau^m remarks, that all those, who carry twins, have their legs very much swelled in the last months of gestation; and elsewhereⁿ he says, their thighs, and lips of the vulva, swell at the same time. He thinks this may be pretty certainly known, if the belly in the woman with child rises on each side, leaving a depressed line in the middle, and if there are different motions at the same time to be perceived in each side of the belly: which happens more frequently as the stirring of one child generally excites that of the other; for although inclosed in separate membranes, yet they are very contiguous to each other. Along with these signs, if, at the same time, there were very large

^m Traite sur les Malad. des Femm. gross. lib. i. cap. 17. Tom. I. p. 145.

ⁿ Ibid. cap. viii. p. 104.

large tumours on the joints of the lower extremities, then this ingenious author was most certain that the woman's belly contained two or more fœtuses.

Although, indeed, we may very justly suspect, when all these signs appear, that there are twins contained in the uterus, yet it does not seem altogether safe to affirm it for certain; for I have frequently observed the event shew the contrary, notwithstanding the midwives, and women with child themselves, had been firmly persuaded that there would be a delivery of twins. Bartholine makes the following remark^o:
 “ For the swelling is often greater in a single fœtus,
 “ than in the case of twins; which I have frequently
 “ observed, whether on account of a larger quantity
 “ of waters, or that the bulk of a single fœtus some-
 “ times equals, or even exceeds, that of twins. The
 “ line along the belly has been held by some as a cer-
 “ tain sign of twins being contained in the uterus;
 “ but that I have seen fail in my own wife, &c. In
 “ truth, I have known not a few deceived in this sign,
 “ taking the various and violent motions of a single
 “ fœtus to be the different motions of twins. Ano-
 “ ther singular proof is brought, to wit, the swelling
 “ of the legs and feet; which circumstance is to be
 “ found in every gestation, even of the single fœtus.”
 I heartily agree with this great man's observations, as I am from my own proper experience convinced of the truth of what he has here said.

With regard to the future sex of the fœtus, we have no certain sign whatever. Moschio^p has collected the principal, as they are handed down from the ancients. They believed there was a male child in the uterus, when the fœtus began soon and strongly to stir itself in the belly, or if the mother kept of a lively and healthy colour, or if the right breast appeared larger: on the contrary, they imagined it to be a female, if the woman with child was weakly and of a sickly colour, and the left breast appeared bigger. What were Moschio's own sentiments with respect to these opinions does

^o Epistol. Medic. Cent. 4. Tom. IV. p. 142.
 p. 3. n^o 26. et p. 20. in fine.

^p Spachii gynæc.

does not clearly appear, as in the end of this text there is a blank, which they have endeavoured to supply in the margin, *ομως οκ αιε αληθη ειναι*, as not being always certain and true: and so far it has been confirmed, that these signs are not always to be depended upon.

It is very well known, as we have already observed, that the ancient physicians thought that the uterus had two distinct cavities, of which the right was appropriated for males, and the left for females. From this mistaken opinion many of the presages with regard to the sex of the foetus took their rise: if, for instance, the right or left breast appeared larger; if the woman with child, when resting upon her knees, should, in rising, lift up the right leg first, or the left; and many other such notions. Some would have this matter determined by the phases of the moon. All these notions may be seen collected in the writings of Mauriceau^q, who proves every one of these presages to be erroneous, and thinks it impossible to determine any thing with certainty in respect to the sex of the foetus contained in the uterus: only he excepts one particular sign; and that is, Women who have born several children had observed, that when they went with males, they greatly desired some particular things, which they had rather an aversion to when they went with females; or they had taken notice of some other peculiarity denoting the difference of sex during pregnancy. I knew a lady who was exceedingly fond of coffee when with child of a boy, and could not endure it when she was with child of a girl; and from this sign alone she took her presage, nor ever was mistaken.

Here Mauriceau has given a very shrewd advice^r, to wit, that the midwife should get certain intelligence what sex the family is particularly desirous to have; and, when she has learnt this, always to presage the contrary sex: should she happen to foretell aright, the parents will be amazed at her skill, who was so positive in an opinion so contrary to their wishes: if it happen to fall out otherwise, being put in possession of what

^q Traite des Malad. des Femm. gross. lib. i. cap. 8. Tom. I. p. 98, et seq.

^r Ibid. p. 102.

what they most eagerly wished for, they will more easily excuse the falsity of the presage.

§. 1302. **T**HESSE disorders may sometimes be relieved by bleeding, (§. 1297.) or by changing the situation of the body, at times; and also by bandages, and such like contrivances; and, lastly, by softening liniments.

We are now to consider, by what means the symptoms enumerated in the preceding aphorism may be, if not removed, considerably alleviated. For the foetus ought to increase, the uterus to enlarge, and its vessels to be filled with blood. In this case, bleeding is recommended as a remedy, which, if not always, is at least sometimes, of service. But as a great part of the blood in pregnant women is collected about the uterus, the rest of the vessels of the body are deprived of their usual proportion of blood; for which reason they often look pale, and without any blood in the face. Would it be proper, in this state, to lessen the quantity of blood by venesection? One can hardly think so; for we are not treating here of plethoric women, nor of women with child labouring under any acute inflammatory disease, which necessarily requires bleeding. In plethoric women, where the face is turgid and red, the vessels distended, and the pulse full to the touch; no one can doubt but the letting of blood must prove of the greatest service, especially if these symptoms happen near the time of delivery; for then, by the violent efforts of labour, the blood may be forcibly thrown into the vessels of the encephalon, and all its functions thereby suppressed; or even a fatal apoplexy may ensue from a rupture of the vessels; convulsions too may often follow, or a very dangerous hemoptoe, from a bursting of the pulmonary vessels: I have myself seen such unfortunate accidents happen. I am still, however, of opinion, that in a woman of good health, mere pregnancy does not require venesection; and I can never think that

VOL. XIII. I i delivery

delivery is thereby rendered easier, or that it is of any use in preventing the several disorders which happen in child-bed. Conception, growth of the fœtus, and delivery itself, are all the work of nature alone, which a physician ought never rashly to disturb.

The most eminent masters in the art of midwifery have given the same admonitions. Thus Mauriceau^s, when he is treating of alleviating the inconvenience attending pregnancy from varicous swellings, pain and swelling of the legs and thighs, piles, &c. recommends bleeding in the arm; “if the signs of plentitude and superfluity of blood take place in the other parts of the body^t.” In another place he condemns the custom of letting blood near the time of delivery, unless some other pressing symptoms make it necessary, and advises to abstain from bleeding altogether after the seventh month. La Motte^u lays it down as a general rule, “That, if a woman with child be well, and have no complaint, bleeding must not only be useless, but hurtful.” Plethoric people he advises to open a vein, and those who in the beginning of pregnancy are afflicted with nausea, vomiting, lassitude, or fainting. He recounts, however, the case of a woman of a pretty sanguineous and full habit of body, where he was very unwilling to allow of bleeding, because she was in very good health, and felt no inconvenience whatever from being with child. It was in vain that he urged, that she had supported her former pregnancy, and that the delivery in consequence had been successful, without bleeding: he was obliged to open a vein. But as she had conceived immediately after her husband’s return from a very long journey, she could pretty exactly compute the time of her reckoning, the period of which was now about twelve days distant: the following night, however, after the bleeding, she brought forth a child, which was thought hardly to be fully ready, and even his living was almost despaired of: however, he escaped, and grew up afterwards to manhood. In the same place he relates another such case;

^s Lib. i. cap. 17, & 18. p. 144, & seq.

^t Lib. i. cap. 27. p. 198.

^u Traite des Accouch. liv. i. chap. 15. p. 64, & seq.

case; and from thence concludes that he was more and more confirmed in this opinion, "that bleeding is never to be advised to women with child, unless there is an evident necessity for it." At the same time, he thinks the custom of opening a vein about the middle of the term of pregnancy both foolish and dangerous.

By changing the situation of the body at times,] in order to lessen the pressure of the swelled uterus upon the iliac veins, and to forward the return of the blood retained in the varicous veins. This is chiefly obtained by lying down in bed, or on a couch, in different situations, as hath been mentioned in a preceding paragraph. So also to remedy the difficulty of making water, Mauriceau^w advises women with child, when they go to make it, to raise up the belly with their own hands, or with a swathe or band for the purpose, to sustain the weight of the belly, and take off the pressure from the bladder. Others find their advantage in lying with their body forwards when they attempt to empty their bladder: for by this means the weight of the abdominal viscera will bear less upon the bottom of the uterus. Moschio^x too orders the weight and size of the belly, about the eighth month, to be carefully supported by proper swathes, observing that women with child find themselves particularly uneasy this month. If, after trying all these changes of posture and situation, the urine does not come away, then it is to be drawn off by means of a catheter introduced into the bladder; but as the urethra in women is shorter and straiter, hence surgeons usually employ such a catheter as Mauriceau has delineated^y. Here also it is necessary to consider, that the situation of the bladder may be greatly altered by the pressure of the tumefied uterus, so that the neck of the bladder may form a pretty acute angle with the urethra; which more especially happens, when, in a very prominent pendulous situation of the belly, the whole bottom of the uterus lies forwards over the bones of the pubes, as

I i 2 hath.

^w Liv. i. chap. 15. p. 139.

^x Spach. Gynæc. p. 3. n^o. 34.

^y Livr. iii. chap. 33. p. 365.

hath been observed before in the preceding paragraph. In a case of this kind, a very ingenious artist in this way, formerly, among the Dutch², very judiciously advises to make use of a crooked catheter, such as usually is employed for men; that is, in case the urine come not rightly away upon changing the situation: then he ordered the woman with child to lean forward, with her knees separated pretty widely, and her head as low as possible; and, with his two fingers introduced from behind into the vagina, he endeavoured to remove the uterus from the bones of the pubes, and introduced the crooked catheter in such a way as that the convex part of the catheter should look towards the intestinum rectum, and the concave side to the os pubis: if he found still a resistance, he continued to remove the uterus from the os pubis, and then the catheter entered the cavity of the bladder: but, as soon as he perceived the urine to flow out, he turned about the patient's body, and made her lie upon her back, but with her head still lower down; for in these last months of gestation the former troublesome situation cannot be long endured without hazard of fainting: at the same time he took care to raise up the abdomen, until all the urine was entirely passed: he left also the catheter in the bladder for two days together, that the bladder, having been immoderately distended, might by degrees contract, and recover its former strength and elasticity; for, unless this had been done, it would have been necessary next day to have the same operation frequently repeated, which must have been exceeding troublesome. He owns he had the greatest difficulty of all², when, at the time of delivery, the neck of the bladder was so pressed by the child's head, that neither a drop of urine could get out, nor the catheter could by any means be introduced: then there was nothing else to be done but to break the waters; for thus the size of the uterus grew less, and the bladder then emptied itself. He recounts, at the same time, a pretty surprising case, where, after the rupture.

² Denys over het Ampt der Vroetmeesters, &c. cap. 4. p. 128, &c. seq.

^a Ibid. p. 138.

rupture of the membranes, eight pints of water ran out, and there immediately followed a pretty plentiful discharge of urine.

In what manner a too astricted belly is to be relieved, and how the varicous swellings are to be bandaged, hath been shewn in the preceding paragraph.

The piles, if very painful, are to be soothed and fomented with emollient remedies: it is usual to make them sit upon a vessel filled with some warm emollient decoction, with the addition of warm milk, and to apply some softening liniment, several forms of which are to be found in the *Materia Medica*, classed under this head. But in time of delivery, as the child's head presses and flattens the intestinum rectum, the piles swell sometimes so as to be ready to burst, and, by aggravating the labour-pains, cause the woman in labour, through fear of pain, to suppress her utmost efforts, and so retard the exclusion of the foetus.

Should they be very much swelled, then, towards the end of gestation, it might be proper to empty them by means of leeches. Seeing however the blood, as it often happens in these kinds of swellings, grows thick and grumous, it were better in that case to open them with a lancet: but as the piles, after delivery, generally go down of themselves, opening is by no means to be attempted, without there be good reason to apprehend that from their size and swelling they may retard the delivery.

§. 1303. **B**UT a flooding is reckoned one of the most dangerous disorders incident to women with child.

A flux of blood from the uterus, in women with child, is always to be suspected; though there may not always be a like degree of danger attending it, as shall afterward be shewn: but if it happen to flow suddenly, and in a full stream, then it is justly reckoned the most dangerous disorder that can befall a woman with child, and is no less hazardous to the young offspring contained within the womb. It has been al-

ready shewn, that the gravid uterus is gradually distended, more and more, in order to contain the enlarged foetus, with the secundines, and waters in which it swims: yet, whilst it is thus distended, the thickness is no ways diminished; but its vessels are successively filled with blood in proportion as they are distended; whence the quantity of blood, contained within the substance of the uterus, must be very great. The human ovum, however, is in such a manner connected to the cavity of the uterus, that naturally not one drop of blood can pass out from that cavity: but as soon as this connection is loosened by any cause whatever, and particularly if the placenta should begin to separate, the blood, in that case, flows out from the dilated vessels, and frequently indeed so rapidly, and in so great quantity, that faintings and convulsions, from the sudden evacuation of the vessels, with death itself, may justly be apprehended. Certain destruction at the same time awaits the foetus, as it can neither any longer receive the blood from the mother by the umbilical veins, nor convey its own blood to her by means of the umbilical artery to be farther perfected in her body.

The erect posture of the body in walking peculiar to females of the human species, and the custom of the menstrual blood's passing monthly from the uterine vessels, seem to be the causes why abortions happen more frequently with them than in brutes^b; as also on account of the vessels of the uterus and placenta being distended with so large a quantity of blood. But the placenta has a more early and firmer attachment to the uterus, and is of a much larger size, than that of brutes; otherwise abortions would be still more frequent than they are.

It is evident, at the same time, that a hæmorrhage from the uterus must be then more particularly dangerous, when the uterine vessels are in the highest degree of distension, that is, in the last weeks of gestation; whence the following rule is laid down as a certain practical maxim, *That the nearer a woman is to the time*
of

of her delivery, so much more dangerous is a hæmorrhage or flooding from the uterus^c. Hence very many of those escape, in whom a uterine hæmorrhage has happened in the second, third, or fourth months. Now it is in these months that abortions are chiefly observed to happen; very rarely in the months following. Puzos^d, a very eminent and experienced practitioner in midwifery, affirms, that, in all his manifold experience, he had seldom observed any one carried off by a flooding before the fourth or fifth month of pregnancy, unless it was attended with some other dangerous disease, or that they had been destitute of the necessary assistance in these cases. He was apprehensive of much more fatal consequences, when the same happened in the seventh, eighth, or ninth month; for notwithstanding the hæmorrhage may not be so very violent before delivery as in other abortions, yet very many of these die soon after they are delivered.

It is not, however, to be supposed, that floodings, even in the first months, are altogether free from danger; for sometimes they return again after a few days, if either the secundines or grumous blood happen to remain within the uterus after the exclusion of the foetus. Such a case we read of a woman^e who miscarried in the third month, the placenta remaining within the uterus: at first it was attended with no very bad symptom; till eight days afterwards, when there came on so violent a hæmorrhage, that all who were present despaired of her life. A portion of the placenta happened to project without the orifice of the uterus, which being carefully laid hold on by a skilful hand, assisted by the revived efforts of the patient herself, the whole placenta soon came away entire; upon which the flooding immediately ceased, and the patient very soon recovered.

The placenta of abortions are more difficult to bring away than those of a full-ripe foetus, because the umbilical cord is very tender, and more liable to break with

^c Quo partui propior est mulier, eo periculosior est hæmorrhagia uterina. *Mauriceau Traite des Malad. des Femm. grosses, livre i. chap. 21. Tom. I. p. 159, et 535.*

^d *Academ. de Chirurg. Tom. I. p. 361.*

^e *Ibid. p. 360.*

with the smallest force ; and in younger foetuses the placenta is proportionally larger, and occupies a larger surface in the uterus f.

I have twice had occasion to see an acute, continued, and putrid fever, follow in consequence of grumous concreted blood remaining in the uterus after a three months abortion : one of these died in the fourth, the other was carried off on the seventeenth day of the distemper.

A woman, the day after miscarriage, was seized with an ardent fever, attended with perpetual looseness and other bad symptoms : she died on the seventh day g. In this patient, Hippocrates has not mentioned the time of her pregnancy : but, in another, he says, ^h that the fever had seized her, after miscarriage in the fifth month, with the same very bad symptoms ; among which he recounts both the perpetual looseness, and thin blackish urine in small quantity ; and that she died delirious on the seventh day.

Every body knows that abortion frequently is the consequence of a hæmorrhage from the uterus.

How dreadful, however, the event usually is, when worthless women, by taking remedies to procure abortion, attempt to destroy the foetus in their womb, may be seen in another place of Hippocrates. *A certain young woman, about twenty years of age, who had drunk a potion to procure abortion, was seized with pain, and a vomiting of pale and greenish coloured stuff : when she attempted to drink, she was taken with convulsion, and bit her tongue. The fourth day, when I visited her, her tongue was large and black, the whites of her eyes were grown red, and she was altogether restless. She died on the fourth day in the evening i.* Hippocrates seems afterwards, on another occasion, to have recounted

f Medic. Essays, Tom. II. n^o. 11. p. 239.

g Epidem. 3.

ægrot. x. Charter. Tom. IX. p. 248.

h Ibid. ægrot. xi. p. 250.

i Cuidam, quæ circa vigesimum ætatis annum pharmacum abortum promovens potavit, dolor accidit, biliosorum multorum, pallidorum et porraceorum, vomitus. Quum bibisset eam convulsio invadebat, et linguam mandebat. Quarto die ad eam accessi, ipsi lingua erat magna, nigra ; oculorum alba rubescebant ; insomnis erat. Quarto die sub noctem mortua est. Epidem. v. textu 33. Charter. Tom. IX. p. 345.

counted this history a second time^k; but adds, that she had of her own accord taken this abortive medicine, thirty days after impregnation. At the same time we read she vomited up black-coloured stuff: the rest of the symptoms agree with the first account.

Ovid, that great master in love-affairs, inveighs bitterly against this wicked practice^l.

———— *Sine crescere nata.*

*Est pretium parvæ non leve vita moræ.
Vestra quid effoditis subjectis viscera telis;
Et nondum natis dira venena datis, &c.
Hoc neque in Armeniis tigres fecere latebris;
Perdere nec fœtus ausa læna suos.
At teneræ faciunt, sed non impune, puellæ.
Sæpe, suos utero quæ necat, ipsa perit;
Ipsa perit, ferturque toro resoluta capillos,
Et clamant merito, qui modo cunque vident.*

Ah! let it grow for nature's use mature:
Ah! let it its full length of time endure.
'Twill of itself, alas! too soon decay,
And quickly fall, like autumn-leaves, away.
Why barb'rously dost thou thy bowels tear,
To kill the human load that quickens there?
On venom'd drugs, why venture to destroy
The pledge of pleasure past, the promis'd boy, &c.
The tygresses, that hunt the Armenian wood,
Will spare their proper young, tho' pinch'd for food;
Nor will the Lybian lionesses slay
Their whelps: but women are more fierce than they;
More barb'rous to the tender fruit they bear,
Nor nature's call, tho' loud she cries, will hear.
But right'ous vengeance oft their crimes pursues,
And they are lost themselves who would their children-
lose;

The pois'nous drugs with mortal juices fill
Their veins, and undesign'd themselves they kill:
Themselves upon the bier are breathless borne,
With hair ty'd up, which was in ringlets worn,
Thro' weeping crowds, that on their corpse attend:
Well may they weep for their unhappy end.

Let

^k Epidemic. VII. ægrot. 82. Charter. Tom. IX. p. 583.
^l Amor. lib. ii. Eleg. 14. p. 329, 330.

¹ Ovid.

Let those, therefore, at least tremble for their own life, whom the crime of homicide, it seems, cannot terrify; for Tertullian has very well said^m, “It is by no means allowable to dissolve the embryo in the womb, even when the blood is yet hardly formed into a human creature: to prevent its generation and growth, is only a more early crime of homicide; nor is the difference very material, whether any one take away a life already perfect, or hinder it in its first formation: what would have been a human creature, must be considered, in this respect, as a human creature.”

From these also may appear the reason why Hippocrates makes the following remark: *Those who suffer abortion are in more danger of their life: for abortions are far more hazardous and painful than mature and natural deliveries; because the embryo cannot be destroyed without great violence, whether it is done by medicines, particular meats or drinks, fumigations, or any thing else whatsoever. But all violence is extremely hurtful and injurious: for in this case there is great danger of the uterus becoming either ulcerated or inflamed. This last indeed is very dangerousⁿ.*

Mauriceau has observed^o, that women with child are then more particularly in the greatest danger, when they suffer abortion during the time they happen to be thrown down in a continued fever, which, for the most part, uses to be of the remitting kind; and most of all, if at the same time the breast be affected. Many he saw, with the utmost regret, perish in this manner, very soon after the miscarriage. This ingenious gentleman thought that Hippocrates had a regard to this in the following preface: *If a woman with child is taken with any disorder, foreign and unfriendly to the state of pregnancy, she will certainly be carried off in the child-bed.*

^m Mauriceau, lib. i. chap. 24. p. 191.

ⁿ Quæ abortiunt magis periclitantur: abortiones enim graviores sunt, quam partus; non enim citra violentiam embryo corrumpitur, sive medicamento, sive potu, vel cibo vel subdititiis, vel re alia quapiam. Violentia autem malum est: hoc enim casu periculum est, uteros ulcerari aut inflammari. Hoc autem est periculosum. *De Mulier. Morb. lib. i. cap. 71. Charter. Tom. VII. p. 771.*

^o Ibid. p. 196.

bed cleansing^p. Perhaps there is still a greater congruity in another place, where he says, *Women with child, who are seized with fevers, and fall away, growing exceeding thin without any manifest cause, either bear their children with the greatest difficulty and danger, or run the risk of their life from abortion*^q. With good reason therefore he prognosticates danger. Yet the destruction threatened is not always certain. I have recovered many women with child, who had been thrown down by acute diseases; and have known several also cured by others: nay, I remember to have had the care of a girl of fifteen years of age, who, from a stolen embrace, was at this time four months gone with child, and who suffered abortion in the very middle stage of the small-pox, whereof she had a very numerous load; and yet she very happily escaped the danger.

Nor is it the only apprehension we have to fear, lest a woman with child, through loss of blood, be carried off by a flooding from the uterus: but likewise, should she even weather this so far, there is still greater danger, from the great and sudden loss of blood, of her falling into very difficult chronic disorders; as a cachexy, §. 1168. dropfy, §. 1229. and several others. I saw a woman, who, after a violent hæmorrhage from the uterus, suffered frequent and long-continued faintings: notwithstanding also she had escaped beyond all expectation, and had brought forth a child at the proper time, which, however, proved very weakly, and lived only a few days, yet she could never rise from bed, without being immediately seized with a violent palpitation of the heart, attended with the greatest anxiety: for the space of twelve years, this miserable woman continued to be fixed in this manner to her bed, and, provided she lay at rest, her health was otherwise tolerably good. What seems very probable is, that, in these long-

^p Si mulier in utero gerens morbum non cognatum (congenerem) habeat, in puerperii purgatione perit. *De Nat. Puer. cap. 5. Charter. Tom. V. p. 315.*

^q Quæ utero gerentes a febribus corripiuntur, et vehementer citra manifestam causam extenuantur, pariunt difficulter et periculose, aut abortientes periclitantur. *Alphar. 55. sect. 5. Charter. Tom. IX. p. 228.*

long-continued and frequent faintings, the blood, stagnating in the heart and larger vessels, had gathered into polypous concretions, which immediately formed an obstacle to the venous blood, suddenly accelerated by the motion of the body.

We are also farther to consider, that, after suffering abortion, if the secundines should remain behind, or the concremented blood be retained within the uterus, many troublesome disorders may from thence arise. Hippocrates has said, *Pains passing from the ilia towards the smaller intestine, in long-continued diseases, and where a woman has not been rightly cleansed, are very pernicious in their consequence*^r. In this place he seems to mean the cleansing or purgation of the uterus, after abortion, from whatever is liable to be retained, and by means of the lochia.

From what has been said, then, it is sufficiently demonstrated, that a flux of blood from the uterus may be justly reckoned one of the most dangerous disorders which can happen to a woman with child.

§. 1304. **A** FLOODING generally arises from a separation of the placenta from the uterus, whilst the arteries are full of blood, and the uterus distended, so that the arterial blood frequently flows out in a full stream.

Naturally the human ovum, by every part of its surface, adheres to the cavity of the uterus, which effectually hinders any thing from passing out by the uterine vessels; and even in time of delivery, when the foetus has come away, hardly any, or at least very little blood follows, although the chorion may have been on all sides disjoined from the uterus, during the exclusion of the foetus: but soon as the connection of the placenta with the uterus is loosened, the blood then comes away in a large quantity, and not before. During the time of pregnancy, as we have formerly had frequent

^r Dolores ex iliis ad intestinum tantie transeuntes, in morbis longis, ex abortu, neque valde purgata muliere, perniciosi sunt. Coac. Prenot. n^o 515. Charter. Tom. VIII. p. 882.

quent occasion to mention, the vessels of the uterus are continually enlarging; consequently, when the time of delivery approaches, they become very large and capacious; so that, when the placenta comes to be separated from the uterus, the wide orifices of the enlarged vessels must pour out the contained blood in a full uninterrupted stream. Therefore, when the blood in women with child comes away in a full stream, it may justly be taken for granted that the placenta is separated from the uterus, either wholly, or at least in part. But a flooding of this sort is far more dangerous, because in pregnancy the uterus continues to be filled up; whereas, after delivery, when the placenta is once brought away, the empty uterus may then contract itself, and thus lessen the capacity of the vessels, and of course diminish the hæmorrhage or flooding. But as blood may issue out of the vulva of a woman with child, even without a separation of the placenta, so in the text our author judiciously asserts, that a flux of blood from the uterus generally, or for the most part, depends upon a separation of the placenta from the uterus: for there may be even other causes, though they are exceeding rarely to be met with. Thus Mauriceau's remarks, that if a gravid uterus should happen to be slit up or divided by any external violence, a vast uterine hæmorrhage may be the consequence, even although the placenta should continue entirely attached to the uterus. Such a mischievous disorder, though it may be suspected from a previous knowledge of the preceding violence as a cause, yet cannot be known for certain till after inspecting the body after death. But, even tho' it were known in time, he imagined there could be no hopes of relief, however the delivery might spontaneously ensue, or be immediately procured by art; because the uterus, from the severity of the hurt, would find great difficulty in contracting itself: and on these occasions, where the injury was so great, a supervening inflammation of the uterus was always to be apprehended, which frequently, on other occasions, is observed.

served to be so very mortal and dangerous.

It is a thing which yet far more rarely happens, and what La Motte[†] had only once an opportunity of seeing, where a hæmorrhage from the uterus was occasioned by a rupture of the vessels contained in the umbilical cord. He was assisting at a labour, where he expected a natural and easy delivery. The waters were formed : but just as they were ready to break, he observed his hand stained with a little blood ; and, as it very often used to happen, he concluded that the child would soon follow. A little after, the waters were broke, and the child's head presented itself ; but a good quantity of blood issued out at the same time, which was increased at every labour-pain. He was firmly persuaded, that the hæmorrhage must be occasioned by the loosening of the placenta from the uterus ; nor could he now turn the child, in order to hasten the delivery, by extracting it by the feet, because the head was got down into the pelvis, and the woman's labour-throes were become too violent and continued. The patient, however, being a woman of resolute courage, and not ignorant of the imminent danger, so forwarded the delivery, by her strenuous efforts, that in a very short time a girl was produced into the world, very weakly indeed, and round whose neck the umbilical cord having twisted itself three turns, had occasioned the delivery to be so tedious and difficult. The patient happily escaped ; and was afterwards seven times brought to bed, without any bad accident whatsoever befalling her.

Soon as the infant came away, the flooding ceased entirely ; and upon examining the umbilical cord, it appeared that one of the varicous knots, so often observed in the umbilical vein, having been opened, as it were by excoriation, had poured out the blood ; which, from the mutual pressure and attrition of each circumvolution of the umbilical cord round the infant's neck, might very easily happen. It is at the same time very evident, that the true cause of this hæmorrhage could never have been known before a complete delivery ;

[†] *Traite des Accouchemens*, liv. iii. chap. 8. obs. 211. p. 296.

very; and while the membranes were already broke, this ingenious surgeon could scarcely have a suspicion of such a thing, as he had never seen any thing like it before, and the loosening of the placenta from the uterus had always been considered as the most frequent cause of a uterine hæmorrhage; with regard to which, the following prognosis of Hippocrates seems to have some affinity: *If, in the case of a woman being in labour, a bloody flux shall come away before the fœtus in considerable quantity, there is danger lest the child shall either come forth dead, or, when produced, shall have very little chance of living*^u. In the case just now mentioned, the flux of blood was increased during the labour-pains; but when the placenta is either entirely or in part separated, the hæmorrhage, in that case, is rather increased during the intervals of the labour-pains. For Hippocrates expresses it by *αδινουση*, when the labour pains are felt, and before the fœtus, whose exclusion is just at hand; and remarks, that this happens without much pain: for in the very time of the labour-pains the child's head fills up the dilated orifice of the uterus; on their remission, the pressure of the child's head is in some measure taken off, and hence there is more room for the blood to run out. How far a diagnosis may be formed upon this circumstance, seems to be a question of some nicety. For if, during the labour-pains, the child's head has not as yet come down so far as to fill up the orifice of the uterus, the uterine hæmorrhage may then be increased also in the time of the labour-pains, which in that case cannot be distinguished from the effects of a separated placenta. In both cases the principal hopes of safety consist in this, that the uterus be emptied by as speedy a delivery as possible, that so it may have an opportunity of contracting itself, as we shall afterwards farther explain.

But seeing, as hath already been observed, that the human ovum is, through its whole surface, joined to the uterus, the blood perhaps may, in all likelihood,

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come

^u Si cui parturienti ante fœtum multus sanguinolentus citra dolorem fluxus prodeat, periculum est, ne fœtus mortuus exeat, aut minime vitalis edatur. *De Superfetatione, cap. 5. Charter. Tom. VII. p. 863.*

come away when any part of the connection between the chorion and uterus is loosened. In that particular place indeed, to which the placenta adheres, the blood-vessels are very large; but yet the other parts of the chorion are not wanting in considerable vessels. The ingenious Noortwyk, whom we have had so often occasion to mention with just commendation ^w, when he threw in a waxen injection into a branch of the iliac artery of a gravid uterus, observed it penetrate very deep into the vessels of the placenta and chorion: upon lifting up the preparation, and attempting to separate the human ovum from the uterus, to which it was connected, he could discover plainly the chorion to be joined by means of the true genuine cellular substance of the uterus; which connection, however, might easily be broken with the slightest force ^x. But, “in separating this same cellular substance, all
 “over the whole external round there were a vast number of blood-vessels presented themselves, which
 “seemed to be very well filled, and coming out from
 “the chorion were inserted into the uterus. Upon
 “a more accurate examination, the internal surface
 “of the womb was found to have a vast quantity of
 “pores (orifices of vessels) of a middling size, at some
 “little distance from each other; with which the canal, of the same dimensions, which passed out from
 “the chorion through the aforesaid cellular substance, inosculated so as that vessel corresponded exactly to
 “vessel, plainly shewing one cylinder of injection had
 “filled them both in common. Some of these vessels were larger, others less: in general, their
 “sizes were such as to admit of the larger or lesser sized pins, and some even could take in the head
 “of the largest pin. Again, some went straight into
 “the uterus; others not, until they had been reflected a little way on the surface: these last, too,
 “were not entirely round, but somewhat compressed, and, as it were, flattened. The union, likewise,
 “of all the above-mentioned vessels with the uterus
 “was easily broken with the smallest force.” To all these

^w *Uteri humani gravidi anat.* p. 11.^x *Ibid.* p. 6.

these observations and experiments I had the pleasure and satisfaction of being myself an eye-witness.

In this manner he observed the ovum to adhere to the womb in general; but about the placenta this connection was somewhat stronger, and the vessels at this place more numerous: “ which coming out from the exterior surface of the placenta, and being inserted in the uterine pores, there appeared to the naked eyes a plain communication between the vessels of the uterus and placenta; and these, in like manner, were of different diameters, in general not much larger than those described about the chorion, and like them extremely tender.”

From all these, one would be apt to imagine that we had no more reason to apprehend a profuse hæmorrhage from a disjunction of the placenta from the uterus, than when any part of the chorion was separated from the same. But, “ at the root of the placenta, where it terminates in a circle above the chorion, this cellular substance, gathered up into ligamentous folds, presents again to the view somewhat of a firmer kind of connection: here the vessels are so remarkably numerous and large, that some of them can admit a child’s finger, appearing like short venous sinuses, made up of very soft and thin coats, from which very small and for the most part very slender branches are immediately sunk into the substance of the placenta, which plainly appeared, upon looking into the sinuses, after the matter, with which they were filled, had been taken out. The branches, implanted in the placenta, from the bottom of these sinuses, run pretty much in the same manner as the vena cava, inserted in the liver, sends off its branches through the substance of that viscus.” From thence, at the same time, appears the reason why a profuse hæmorrhage may follow, notwithstanding most part of the placenta shall, as yet, adhere firmly to the uterus, if only that orbicular edge should begin to separate, where the largest vessels are, which in thinness exceed that of a spider’s

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web,

web, and are so soft and tender as hardly to be touched without bleeding; whence it is no wonder, if in the secundines, brought away by the hands of the midwife, either by collapsing they disappear, or are entirely defaced in handling^a.

There can be then no farther doubt of the immediate communication between the vessels of the uterus and those of the ovum, seeing the ovum is joined all round to the uterus by means of its vessels, so that a direct communication of the most remarkable uterine arteries with the vessels of the ovum may be plainly demonstrated. By these vessels the mother's blood is directly brought to the chorion; and from this blood the liquor of the amnios seems to be separated, which surrounds the foetus on all sides. For Levret^b has observed, that when a woman with child, in a lues venerea, has made so much use of mercurial frictions, as even at the same time to cure the foetus of this abominable disorder, the water contained in the amnios has then given manifest proofs of mercury: for, in this case, it contracts a leaden colour, and when rubbed upon red copper turns it white, and so much the more so in proportion to the quantity of mercury which had been used in this way by the mother.

From what has been said we may likewise understand, why, in the time of delivery, a small quantity of blood is observed when the waters are formed, as the midwives use to say, and, greatly dilating the orifice of the uterus, appear without it a good way. Now this is very justly reckoned as a pretty certain sign of a speedy delivery; for the membranes cannot possibly project out so far, but many of those vessels, which serve to connect the chorion to the uterus, must be broken, and so pour out that small quantity of blood with which the sheets and midwives hands are tinged. Nor can a very great quantity of blood at this time come away, because, when these very slender vessels are broken through, they immediately collapse, and the swelling of the waters fills up the orifice of the uterus

^a Uteri humani gravidi anat. p. 11.
n^o 265, 266. p. 43, 44.

^b L'art des Accouchem.

terus entirely: the waters being broke, the infant's head immediately succeeds, and fills up the same orifice. This, indeed, used to be attributed to the violent dilatation of the mouth of the womb, by which it was more or less dilacerated. But so great a dilaceration as to break the blood-vessels does not always happen: and if it did, it ought more especially to be at the time when the child's head has passed through; and yet it is very evident, that something of that bloody matter is more frequently observed before the waters are broke, which, gradually swelling, dilate by degrees the smooth yielding orifice of the uterus. Whence the first-mentioned cause seems, by much, the most probable.

But what has been said, with regard to the connection of the ovum with the uterus, by means of their vessels, is also confirmed by the observations of other eminent men. Thus the celebrated Simson^c affirms, that having occasion to examine the body of a woman, who died in the seventh month of her pregnancy, “ in separating the placenta, he drew out its processes to the length, at least, of the middle finger: they rose also in great numbers from the whole surface of the placenta; some of them were of the size of a goose-quill: even from the whole circumference of the chorion there arose fibrous sorts of filaments, small as hairs, which were inserted into the uterine pores. But when these processes of the placenta were drawn out (till they broke) they immediately contracted themselves, and put on the granulated appearance of a mulberry.” The celebrated Albinus also^d had occasion to observe certain twisted arteries, not branching out in the common way, in that part of a gravid uterus to which the placenta is connected, where they were to be seen in great abundance: they seemed to be ruptured however, owing to the placenta's having been separated from the uterus. He looked for the same vessels afterwards in another gravid uterus, where the placenta was firmly attached; and then he found
the

^c An inquiry, how far the vital and animal actions, &c. Preface, p. 9.

^d Academ. annot. lib. i. cap. 9. p. 34, et seq.

the very same filled with blood, and inserted into the placenta: whence there could be no doubt, but they really belonged to the placenta, and that they threw their blood into the same. It must likewise be observed, “ that care was taken nothing should be changed, “ neither by pressing and squeezing, nor by blowing “ nor filling them, nor by any other method what- “ ever;” and therefore every thing appeared in its natural situation and connection. Those accurate tables of the gravid uterus, published by that excellent and very eminent anatomist, on this occasion, highly deserve to be looked into and consulted.

It is therefore very certain, that there is a correspondence and communication between the uterus and ovum, by means of the vessels; and that these being ruptured, from whatever cause, there may follow a uterine hæmorrhage, which will be far more profuse if the circular part of the placenta shall happen to be loosened in its connection with the uterus; for at this place the vessels, which come from the uterus into the placenta are very large and numerous. But it is also very possible that even these vessels which go from the uterus into the placenta may be ruptured, and yet no blood be observed to come from the uterus. This the celebrated Albinus has remarked, and describes in the following manner^c: “ The placenta of that woman “ in labour, whose uterus I followed in some of my “ engraved tables, had partly separated from the ute- “ rus, a considerable quantity of coagulated blood “ being interposed between it and the uterus; but “ through the whole circumference of its circular “ edge nothing had as yet appeared like a separation, “ which very effectually hindered the blood from get- “ ting out by that quarter.” In such a case, however, the danger is, lest the blood, flowing from the ruptured vessels between the placenta and uterus, accumulating there, shall at length loosen the connection between the exterior and circular edge of the placenta with the uterus, and by that means bring on a very profuse hæmorrhage, as hath been before observed at

§. 1296. "For the placenta is not insinuated into the uterus by means of the finest capillary branches of its vessels^f." This is prevented by that genuine membrane extended not only over all the convex surface of the placenta which touches the uterus, but also, entering the furrows of the placenta, insinuates itself much in the same way as the pia mater in the furrows of the brain: nor can this membrane be produced from the blood gathering upon the convex surface of the placenta; for we find the very same in the most recent placenta taken as yet warm and smoking from the mother^g.

§. 1305. **T**HIS is known to be the case when the os uteri is open, when the blood flows in a large and rapid stream, greatly impairing the strength, and occasioning a great deal of pain, whether it comes away fresh, or in clots.

Seeing this disorder is so very dangerous to women with child, it will be worth while, not only to know the signs when a flooding is already come, but even when we shall have reason to apprehend its coming.

It is however to be observed, that every hæmorrhage of the uterus is not equally dangerous; and that blood sometimes issues from the vulva, which does not proceed from the uterus. All who have wrote concerning the diseases of women with child, take notice, that with some particular women it is customary to evacuate a small quantity of blood in the first months of pregnancy, and at the accustomed similar periods indeed in which they used to have their menses when they were not with child. This has been the case with some even till the fourth month of gestation. Mauriceau^h knew a woman whose menstrual flux, when she was with child, returned at the usual period till the sixth month, but in a smaller quantity indeed; and

^f Noortwyck de utero gravido, p. 14. ^g Ibid. p. 21. ^h Traite des malad. des femm. gross. liv. i. chap. 20. p. 155.

and brought forth her children in due time, and all very healthy; five of which were at that time living. Nor was he at all apprehensive of any danger, if the blood came away only in a small quantity, without pain, and at a stated period, provided the orifice of the uterus at the same time continued to be shut: for then it is pretty certain, that the blood does not flow from the cavity of the uterus, but from the vessels distributed about the vagina, and the external surface of the neck of the womb. This has already been taken notice of in a former chapter, when treating of the menstrual flux. It is a very good remark of the celebrated Hoffmanⁱ: “It very often happens, that women who are full of blood, in the second and third month of their pregnancy, experience a flux of blood, accompanied with no pains, or spasms, in the lumbar or abdominal regions, and without any kind of weakness, or preceding shivering or stiffness in the extreme parts; for in this case the blood does not flow out from the cavity of the uterus, but proceeds rather in a salutary manner from the little vessels on the neck of the uterus and vagina.”

However, notwithstanding from certain observations it appears that such a slight hæmorrhage may happen without any harm; and though it seems very probable that the superfluous blood, which remains over and above filling the enlarged vessels of the uterus and the nourishment of the fœtus, is then only evacuated; yet Mauriceau^k thought it much safer to take off the plethora by bleeding, than to commit the whole of this affair to nature. Hippocrates^l, we know, has declared as follows: *If a woman, who is gone two or three months with child, shall have her menses early and punctually every month, the fœtus must necessarily by this be rendered both puny and weakly.* Sometimes also, in these days

ⁱ Medic. Ration. et System. Tom. IV. parte ix. cap. 623. ^k Loco modo citato, p. 157.

^l Mulieri fœtam bimestrem aut trimestrem, utero gerenti, si menses quamprimum singulis mensibus prodeant, eam, tum tenuem tum debilem reddi necesse esse. Interdum etiam his diebus, quam diu menses prodierint, febris corripit. Quumque fluunt, et ubi effluxerunt, pallefcit, quantumvis parce fluant. *De Mulier. Morb. lib. i. cap. 23. Charter. Tom. VII. p. 744.*

days wherein her menses come away, she is seized with a fever; and, both when they flow, and when the flux is over, she is very pale-coloured, however sparingly she may have menstruated. It appears very evident, from this text, that he speaks not here of a woman with child, of a plethoric or full habit of body, but of one who is ready to grow pale on losing the smallest quantity of blood; and certainly it must in this case prove very hurtful, because here the superfluous blood is not taken away, but that which is absolutely necessary rather diminished; and therefore such a hæmorrhage must be very prejudicial to both mother and child. Besides, from what follows it manifestly appears, that he speaks of the blood which comes from the uterus itself: *In these the uterus opens itself more than is proper, and lets out what should serve for the growth of the foetus^m.* And a little after: *But if the uterus open itself too much, the blood is allowed to flow as it used to do every month, and what is contained in the uterus becomes wasted and weaklyⁿ.* And in this sense it appears that aphorism of Hippocrates is to be understood, where he says, *If in a woman with child the menstrual purgation come away, it is impossible the foetus can be strong and wholesome^o.* But Galen, in his commentary on this place, very ingeniously observes, that seeing that *purgationes* are mentioned in the plural number, and the verb *prodeunt*, come away, joined to it, he does not mean here the excretion of a little for once or so, but that which comes away frequently and in considerable quantity: *For that blood, which is for once or twice excreted, and but in small quantity, in many is observed never to be the least injurious to the foetus^p.* Then he adds what follows: *But this excretion of blood, which happens*

^m His uteri plus æquo dehiscunt, et incrementum foetus dimittunt. *Ibid.*

ⁿ Si autem uteri plus æquo dehiscant, sanguinem singulis mensibus, sicut prodire consuevit, effluere sinunt, et quod uteris continetur tenue et debile fit. *Ibid.*

^o Si mulieri utero gerenti purgationes prodeunt, impossibile foetum sanum esse. *Aphor. 60. sect. v. Charter. Tom. IX. p. 252.*

^p Qui namque semel, aut bis, paucus excernitur (sanguis), in multis citra ullam foetus læsionem conspicitur. *Ibid.*

happens to women with child, seems to come from the veins in the neck of the uterus ; for internally, in the uterine cavity itself, the chorion is suspended or attached on all sides ; for which reason nothing can get out from thence into the vagina or vulva^a. It is evident, at the same time, that there can be no better way of understanding the aphorisms of Hippocrates than by illustrating them by similar and parallel passages of the same author.

The diagnosis then of a dangerous hæmorrhage, or flooding, is taken from the largeness of the quantity, pains about the loins and belly, (which, however, frequently happen also to women when menstruating ;) and sometimes there is only a small quantity appears at first, which is presently followed by a vast hæmorrhage from the uterus, in proportion as the placenta separates, more and more, from the uterus, or as the number of vessels, which connect the chorion to the uterus, are broke through. But the principal sign is, when the orifice of the uterus is loosened, and stands widely open ; for naturally, in women with child, the lips meet so close as to be almost shut up entirely, whilst the little chink which remains is filled up with a mucous glewy kind of matter. There can remain no doubt whatever, if the blood come away in a full stream, or if grumous clots of blood are passed, with pains in the loins and belly, followed by great weakness and debility. Now these clots of blood are either concreted in the uterus itself, when the blood poured out from the ruptured vessels stagnates for some time before that part of the connection of the chorion with the uterus, towards its orifice, is yet loosened, so as to let the blood pass out freely, and in a fluid state ; or these clots may also be coagulated in the vagina, when women endeavour to stop the efflux of blood by holding their thighs close together. Such lumps of coagulated blood are usually taken in this case, by the ignorant women then present, for a mole or false conception,

^a At excretio, quæ gravidis accidit, ex cervicis uteri venis fieri videtur ; nam interne in ipso cavo uteri suspenditur chorion ; quare nihil per illa in muliebrem sinum excerni potest. *Ibid.*

ception, as they may acquire a pretty large size in the vagina, but cannot within the cavity of the uterus, which is closely filled up already with the foetus and its secundines.

But when once so profuse a hæmorrhage from the uterus is already come, our knowledge is then too late; for abortion, for the most part, is the immediate consequence: wherefore it would be also of great advantage to know these signs likewise, by which we may foresee a hæmorrhage at a distance, and when it is likely to happen, in order that we may prevent it by proper remedies.

It is of itself sufficiently evident, that this disorder may then be justly apprehended, if the causes, from which it is most frequently observed to arise, shall have already gone before. As to them we shall speak more fully under the following aphorism.

As to that natural correspondence which there is between the breasts and uterus, we have had already frequent occasion to mention. Whilst the vessels of the uterus are filled more largely towards the first period of menstruation, the breast becomes also more turgid and full; in women with child, in proportion as the uterus increases, the breasts swell up. Therefore Hippocrates has said, *In a woman with child, if the breasts grow small of a sudden, she certainly miscarries*^o. For the danger is, lest, on this occasion, the vessels of the uterus breaking their connection with the placenta and chorion, in like manner collapse, which can scarcely happen without their being first emptied; and therefore in this case we have good reason to fear abortion, accompanied with a hæmorrhage from the uterus. Hippocrates, from experience, frequently confirms this prognosis. In the aphorism following he affirms the same, that if a woman shall be with child of twins, and one of her breasts become thin and small, in that case she will lose one of her twins by abortion. But seeing, as we before observed, the ancient physicians imagined the human uterus had

^o Mulieri utero gerenti si mammæ derepente extenuentur, ipsa abortit. *Aphor. 37. sect. 5. Charter. Tom. IX. p. 217.*

two cavities, of which the right contained males, and the left females, hence Hippocrates believed, that the sex of the future abortion could be determined, according as the right or left breast happened to be extenuated. But in another place also he forms a presage concerning the state of the foetus *in utero* from the condition of the breasts: *In a woman with child, if the milk run out of her breasts in great quantity, it betokens a weakly foetus; but, if her breasts remain firm and solid, it is a sign of a sounder, wholesome foetus* ^p.

However, notwithstanding Hippocrates held the sudden extenuation of the breasts as a certain sign of a future abortion, yet he seems not to have laid aside all hopes of preserving the foetus even when the breasts were extenuated. For he says, *In those who are likely to destroy their foetus, the breasts are shrivelled and extenuated: but, if they should again grow firm, there will a pain arise, either in the breasts, or in the haunches, or in the eyes, or knees; nor will the foetus be destroyed* ^q.

Therefore it seems, that unless the breasts go suddenly down, there is still some hope of a cure, notwithstanding they may be even extenuated.

Hippocrates held a pain in the belly and loins to be, in like manner, a sign of abortion: *If a woman with child shall complain of a pain in her belly and loins, there is great reason to fear lest she part with the foetus by abortion, on account of the membranes being ruptured which contain it* ^r. In women with child, unless it be very near the time of delivery, pains of the loins, when they continue long, are always to be suspected: especially if they return by intervals, and terminate towards the lower parts of the belly; for then they are

^p Mulieri utero gerenti si lac copiosum e mammis effluit, foetus imbecillum significat; quod si solidæ mammæ fuerint, saniores foetus significat. *Ibid. Aphor. 52. Charter. Tom. p. 225.*

^q Quæ foetus corrupturæ sunt, iis mammæ extenuantur: quod si iterum duræ evaserint, dolor erit, aut in mammis, aut in coxis, aut in oculis, aut in genibus; neque (foetus) corrumpunt. *Ibid. Aphor. 53. p. 226.*

^r Si mulier utero gerens ventrem et lumbos doleat, metuendum est, ne abortione foetus excludat, ruptis membranis eam continentibus. *De Mulier. Morb. lib. i. cap. 25. Charter. Tom. VII. p. 745.*

are real labour-pains, by which the fœtus, however unripe, must be excluded, and the miscarriage is frequently preceded by a very dangerous hæmorrhage from the uterus.

Again, there is a circumstance also, which we must be principally attentive to, namely, that the hæmorrhage from the uterus, notwithstanding it may appear to have entirely ceased, is very liable to return: for as the ingenious Puzos, eminent for his skill and experience in this art, very well observes*, that part of the placenta, which being separated was the cause of the hæmorrhage, does not seem as if it could easily be attached again to the uterus, so as to adhere with the same firmness as before; but what stops the hæmorrhage at this time seems rather to be the coagulated blood applied to the gaping orifices of the vessels, so as to accommodate itself to their diameters, and block up the blood from running out. These clots dropping off afterwards, the hæmorrhage of the uterus returns, and, for the most part, more profusely and in larger quantity. Whence it is evident, what strict and continued caution is necessary to be observed with regard to women with child, who have once had the unhappiness to experience this misfortune.

§. 1306. **F**LOODINGS may arise from violent passions of the mind; from violent exercise; from the injudicious use of hysteric and emmenagogue medicines; and from blows on the lower part of the abdomen.

The causes, from which hæmorrhages of the uterus are observed to happen are very various. For some are of such a nature, as may easily occasion it to the wholesomest and strongest sort of women; such, for instance, are a violent blow upon the belly, or any strong and violent fit of passion. Others again, not so hurtful to many, are yet to some, pregnant women, very dangerous, as being more disposed and liable to

floodings from the uterus and abortions: and then the peculiar disposition of the uterus itself may be also justly reckoned among the causes; and the foetus too may be considered as having a share in the same. All which deserve a particular consideration, the better to discover how far art can go in this case, and what sort of remedy may be proper for each.

Violent passions of the mind.] How surprising and sudden the changes are, occasioned in the human body, by violent affections and passions of the mind, hath been already often mentioned, (see §. 104, 611, 629, 1062, 1093, 1181, 1200.) therefore they need not again be here repeated. It will be sufficient to observe in this place, that by sudden fear all the vessels of the body are contracted; by anger all the humours are rarified, and the vessels become full and turgid. The greatest general has, through extreme grief, dropped down dead of a sudden, who, a little before, had with great intrepidity and unconcern looked a thousand mortal dangers in the face: the Spartan mother, through excess of sudden joy, on seeing her son returned, whom she had imagined to be killed in the field of battle, expired in his filial embraces. If then it is considered, how emotions so sudden, and shocks so violent, may affect the tender vessels which serve to connect the chorion and placenta with the uterus, no one need to wonder, why in women with child a hæmorrhage from the uterus should be so often the consequence of some violent affection of the mind. A woman about thirty years of age, of a strong make of body, and pretty tall, was constantly employed in the market-place, where she was accustomed to be engaged in daily quarrels, and to indulge herself constantly in scolding and fits of anger: being with child, and very near the end of her reckoning, she was suddenly provoked into a violent fit of rage, at a woman in the neighbourhood, for striking a boy of five years of age belonging to herself: presently perceiving something unusually painful in her body, she said by way of preface, it must certainly be the cause of her death. Some days afterwards there followed, all of a sudden, a most

a most profuse hæmorrhage from the uterus, whence she was carried off in convulsions before any thing could be attempted in order to save her: when the body came to be opened, two male fœtuses were found covered all over with coagulated blood, with which the uterus was likewise filled, plainly occasioned by a rupture of its vessels and those of the placenta †.

The same ingenious author recounts several other cases, which serve to shew how injurious violent affections of the mind may prove to a woman with child. Many I myself have seen; nor is there a physician, perhaps, who has not had frequent occasion to observe the same; but this particular case I selected, on purpose to shew, as it happened to a hale strong woman, accustomed to daily squabbles and habitual anger, what mischief this sudden fit of rage could produce. The same may be apprehended from sudden grief, joy, &c. numerous instances of which are to be met with in Medical History. Hence women with child may learn how much they ought to guard against all strong affections of the mind; as also others, who may have occasion to be near them, what care they ought to take, not to irritate them, or surprise them with any sudden news, good or bad, which may sensibly affect them. I knew a woman with child, who had enjoyed a very quiet and sound sleep all the time there was a dangerous fire in the neighbourhood: her officious and anxious mother, running up early while her daughter was in bed, congratulated her on her sleeping so sound, and by that means escaping the terror she must have been in: the poor woman on hearing it began to be taken with a trembling all over her body, and to be very miserably afflicted; at the same time the whole bed was immediately drenched with blood, and faintings and convulsions soon followed.

However, she recovered from this dangerous uterine hæmorrhage; but she lost the fœtus, which was four months old, by abortion.

[Violent exercise.] This is a pretty frequent cause of the hæmorrhage from the uterus, and of abortion;

which women with child, however, may easily prevent if they please. A moderate exercise of the body is of service in time of pregnancy, particularly walking: nay, we see women in the country, when with child, perform all their usual work with ease, provided they do not fatigue themselves too much, or strain their bodies violently in performing it.

It is very well known, that by muscular motion the current of venous blood, moving towards the heart, is accelerated, which of course increases the quickness of circulation through all the vessels of the body (see §. 99.) But among the effects of a quicker circulation at §. 100. the following were also enumerated: to wit, a stronger impulse of the blood thrown into the vessels, a violent mutual attrition between that fluid and the vessels, a greater degree of heat, a greater disposition of the humours towards acrimony. Now, if we consider these effects, along with the tender structure of the vessels which connect the chorion and placenta to the uterus, it will at once plainly appear, that a rupture of the vessels, from too violent a motion of the body, may readily be apprehended; the consequence of which will be a hæmorrhage or flux of blood from the uterus.

Hence it appears, to how much danger pregnant women expose themselves, while they indulge their fancy in leading down a dance, or undertaking a journey, or making any violent effort, lifting too great a weight, &c. The jolting alone of a carriage, especially when driven swiftly along a rugged way, is frequently sufficient to occasion a hæmorrhage from the uterus, and likewise abortion. Whence we see how dangerous the advice is, which some give to women with child, to be driven in a carriage in the last month of gestation, with the intention, forsooth, that by these joltings the child may sooner come downwards, and by that means the delivery be rendered easier and more successful. I have seen some women, who have laughed at this cautious and prudent admonition, when they have felt no bad effects presently after these violent joltings; but some of these in a few hours after,

ter, and others in a day or two, have experienced a very dangerous hæmorrhage from the uterus.

Mauriceau^u, with great sorrow and regret, mentions an accident of this very sort, which happened to his own sister, who, in the last month of her pregnancy, falling down on her knees, was thrown forward upon the ground, and hurt her belly, and, for a day or two, perceiving little uneasiness from it, she neglected to give her body the necessary rest; but, on the third day, all at once, she was seized with violent pains in her belly, and a very profuse hæmorrhage immediately succeeded, in which she was carried off: for some of those vessels, which connect the chorion with the uterus, having been ruptured, the blood poured out by degrees; and, collecting still more and more, had separated the chorion gradually from the uterus, till, very many of these vessels being at last ruptured, the blood had then liberty to run out from thence in a full stream.

It is a thing but too well known, that worthless women, in order to destroy the foetus, employ very violent motions of the body. Hippocrates^w had ordered a singing girl, who happened to conceive, “to take
“ a pretty high leap down to the ground; which when
“ she had done seven times, the conception dropped
“ from her upon the earth, with a considerable explosion
“ five sort of noise.” Then he describes the human ovum with its membrane, containing a pellucid liquor:
“ But the membrane seemed to be made up of white
“ and slender fibres, covered over with a thickish red-
“ coloured ichor;” and about the membrane, “externally,
“ there were livid spots.” In the lesser abortions, which come away with their membranes entire, the whole chorion appears rough with filaments, which are the rudiments of the placenta; but these bloody spots, like the marks of bruises, and the thick reddish ichor, which involved those white slender fibres, seem to declare that the ovum had been already joined to the uterus. But whether she was only six days conceived, seems to be very doubtful, seeing the
ovum,

^u Traite des malad. des femmes grosses, liv. i. chap. 21. p. 162.

^w De natura pueri, cap. 2. Charter. Tom. V. p. 312.

ovum, at the time of conception, is not perhaps as yet connected to the uterus, nor the uterine vessels so much dilated as to pour out red blood. Hippocrates, however, relates^x, that this singing girl had been very conversant with the men; and that she had heard from certain silly ignorant women, that, when any one really conceives, the conception remained always within, and never came away. Hence it could very easily happen that she might have been longer conceived, especially as the conception, which dropped from her after the seventh leap, was compared to a raw egg stripped of its outer shell.

But how this advice of Hippocrates is to be reconciled with his oath, which forbids physicians even to administer an abortive pessary to any woman with child, does not so easily appear. Some will have it, that this book, *de natura pueri*, was not written by Hippocrates, but by Polybus; others again, that what was thrown off in this manner was only a conception, and not a formed embryo. Concerning this affair, see Meibomeus^y. Certainly Tertullian, in his Apologetic, has very well said, “For homicide being once forbidden, it is not lawful for us to destroy the conception of the womb, even though the blood should not have as yet acquired the least rudiments of a human creature.”

In general, then, it may be laid down as pretty certain, that violent shocks to the body, when women are with child, are always suspected of danger, and therefore to be carefully avoided. In the mean time however, there happen, from such causes, shocks of this kind, which it is not always in their power to avoid. Thus I have seen a hæmorrhage from the uterus to be occasioned by violent and frequent fits of sneezing in the beginning of a coryza.

Whence, at the time when catarrhs prevail epidemically, women with child ought to be advised, whenever they perceive the slightest running at the nose, to foment the nostrils with warm milk and water. What proves more frequently hurtful, is a violent cough,

^x Ibid. p. 11.

^y Hippoc. iurjurand. cap. 15. p. 144.

cough, which, in the last months of gestation, is of all things the most troublesome, when the abdomen, by its great bulk, hinders the free motion of the diaphragm^z. In this case, the gentlest softening remedies, particularly opiates, must be forthwith opposed to the violent cough; for although the shocks occasioned by vomiting are not destitute of danger, yet both abortion and uterine hæmorrhages happen most frequently from violent fits of coughing^a.

The injudicious use of hysterical and emmenagogue medicines.] That the milder sort of antihysterical medicines and duly-tempered cordials were of service to women with child, was before observed at §. 1300. Here those remedies only are condemned as hurtful, which from their forcible effects are called *emmenagogues*, of which we have discoursed already at §. 1291. In this affair physicians can never be too cautious, lest they be imposed upon by abandoned women, who attempt by every means to destroy the foetus, in order to hide their shame and ignominy; especially in the beginning of conception, when the abdomen has not as yet attained such a size as to discover their pregnancy to be certain. I always suspected those in particular, who, while they looked fresh-coloured, complained of a suppression of their menses; desiring, at the same time, to have some strong medicines; and assuring me that their bodies were so strong and hard to work upon, that no good could be expected from any thing which was mild or gentle. In this case I used to give such remedies as were entirely harmless, and could not in the least give any disturbance to the body; by which piece of medical craft I frequently brought it about, that for some time, being led on by flattering hopes, at length, their bellies beginning to swell, they acknowledged their being with child, and never thought more of destroying the foetus, but only how to conceal their delivery.

For almost all those remedies, which can justly be called by the name of emmenagogues, are of an acrid nature;

^z Mauricau traite des malad. des femmes grosses, liv. i. chap. 16. p. 141. ^a Levret l'art des accouchemens, p. 195.

nature: but Hippocrates has remarked, *There are women, who, should they eat or drink any thing more acrid or bitter than what they have been formerly accustomed to, will readily destroy the fœtus, in case it is very young in the womb; for the child, if any thing extraordinary happens to it, especially when as yet so very small, most readily dies*^b. But when the fœtus is once dead, abortion is unavoidable, which is usually attended with a hæmorrhage from the uterus.

Now, all acrid remedies whatsoever, which affect either the uterus itself, or the parts adjoining thereto, so as to stimulate them into violent contractions, are very deservedly ranked among the causes of a uterine hæmorrhage. It is common to administer gently-stimulating clysters, as also suppositories, to women in labour, not only to bring away the hardened fæces, but also with a view to stir up and rouse the labour-pains, when they happen to be slow and backward: for the same reason all acrid purgatives are carefully avoided during pregnancy, as they not only occasion painful and troublesome gripes in the belly, but also bring on a violent tenesmus in the intestinum rectum; which, according to the testimony of Hippocrates^c, “if it seize upon a woman with child, causes abortion.” The reason is given by Galen in his commentary^d, namely, “that by such painful disturbance, and troublesome inquietude, the whole body, and more particularly the uterus, which is immediately attached to the intestinum rectum, are greatly disordered.”

The same thing, it is plain, may be justly apprehended from a very violent strangury, and for the very same reason.

And from blows received on the lower part of the abdomen.] For the uterus swelled out and turgid, with the fœtus contained within, occupies the anterior

^b Sunt autem quæ, si acre quiddam, aut amarum, præter consuetudinem, ederint aut biberint, fœtus perdunt, tenello adhuc puello intus existente; si quid enim puero præter consuetudinem accadat, atque si parvulus adhuc fuerit, moritur. *De Mulier. Morb. lib. i. cap. 24. p. 745. Charter. Tom. VII.*

^c Sect. vii. Aphor. 27. Charter. Tom. IX. p. 304. ^d Ibid. p. 305.

rior part of the lower belly; whence, by applying the hand to that place, the motion of the child in the womb may be easily felt. From such a violence, then, being inflicted, the connection of the chorion and placenta with the uterus may not only be destroyed, but the uterus itself may be also divided, as appears from what has already been mentioned above. This is the reason why a fall is always so very dangerous to pregnant women; especially if they happen to fall forwards, for then they are almost sure to strike the prominent part of their bellies, with violence, against the ground. Whence also, in the Mosaic laws^c, a very severe punishment was decreed against the person who should strike a woman with child, in the belly.

But (as we observed a little before) besides the causes just now enumerated, there may be such a disposition in the uterus itself, as greatly to favour a uterine hæmorrhage, and abortion of course, even from the slightest causes; nay, sometimes, even without any foregoing cause at all that could be observed. Such a disposition, however, is sometimes common to the uterus with the rest of the body, sometimes peculiar to the uterus alone. Thus, in countries which lie open to the south, Hippocrates remarks, That the peoples bodies are commonly more delicate; and adds, *Women are very liable to diseases, and to defluxions; many again are barren through disease, and not by nature, and frequently suffer abortion^f*. So also in another place he says, *Those who are uncommonly slender, and with child, suffer abortion in the second month, ere they acquire a proper degree of thickness^g*.

Some such observations we read in another place^h, where he takes notice of the foetus being destroyed at a month, or two months conception, from this cause alone. Some also read το σωμα, the *body*, in place of

79

^c Exod. chap. 21.

^f Mulieres morbis et fluxionibus obnoxie sunt; deinde multæ ex morbo, non natura, steriles sunt, et recenter abortiunt. *De aere, locis, et aquis, text. 9, 10. Charter. Tom. VI. p. 190.*

^g Quæ præter naturam tenues utero gerunt, abortiunt bimestria, antequam crassiores evaserint. *Aphor. 44. sect. 5. Charter. Tom. IX. p. 221.*

^h De natura mulieb. cap. 19. Charter. Tom. VII. p. 690.

το σωμαⁱ: so that in this case the sense would be, not that the orifice of the uterus was to be thickened, but the whole body; for thus the text agrees with the aphorism just now cited. Besides, this is confirmed by the following, which is immediately subjoined: *But if she shall grow preternaturally thick, her womb does not conceive; for the omentum, being fat and bulky, lies above and compresses the uterus, and hinders it from rightly receiving the seed^k*: where to too great leanness fatness is manifestly opposed, which he orders to be brought down and attenuated, as they can never otherwise become pregnant^l.

But the peculiar disposition of the uterus itself may likewise be the cause of this disorder, while the rest of the body may be in very good condition. Thus in Hippocrates we find what follows: *Those who, having a moderate degree of corpulency, suffer abortion in the second or third month, without any manifest cause, have the orifices of their uterine vessels filled with nasty mucus; and so, being unable to sustain the weight of the fœtus, they must be broke asunder^m*. The diagnosis of such a disorder, he lays down as follows: *By this you may know it: She becomes moist, and has a mucous and glutinous sort of defluxion, not at all painful; and should the defluxion give over for two or three days, a mucous discharge comes away along with the menses from the uterusⁿ*. Thus he describes a cold mucous disposition of the uterus, or a simple fluor albus, where there is as yet no degree of acrimony to occasion pain.

In another place^o he remarks, that there are some women who conceive very readily; yet quit their conception

i Ibid. p. 895.

k Quod si præter naturam crassior evaserit, utero non concipit; omentum crassius iucumbens uteros comprimit, neque genituram suscipere finit. Ibid. p. 690.

l Sect. 5. Aphor. 46. Charter. Tom. IX. p. 222.

m Quæ vero mediocriter corpulentæ fœtus bi- et trimestres abortiunt sine manifesta causâ, illis uteri acetabula mucore plena sunt, neque præ pondere fœtum continere possunt, sed abrumpuntur. Ibid. Aphor. 45.

n Hoc autem modo noveris: humida fit, et mucosum glutinosumque defluit, neque mordet: et ubi a fluxu purgari desierit, cum mensibus per duos aut tres dies muci ex utero procedunt. De natura mulieb. cap. 17. Charter. Tom. VII. p. 689.

o De mulier. morb. lib. i. cap. 21. Charter. Tom. VII. p. 743.

ception in the third or fourth month, without any previous cause, “ if the uterus, either by nature, or from
 “ ulcers arising therein, happen to be smooth; for
 “ should they happen to be smooth, the membranes,
 “ which contain the foetus, will not, sometimes, have
 “ so firm a connection as is necessary.”

We see, moreover, from what has been mentioned before, that, whilst the foetus increases, the size of the uterus, for the purpose of its accommodation, is also enlarged in proportion. Hippocrates seems to have taken notice of this as a cause of abortion, when the uterus does not enlarge itself in proportion; for thus he has it. *Should she, however, really conceive, but lose her conception in the second month, exactly at the sametime, neither sooner or later; and if this shall happen to her twice or three times running in the very same manner; or even if she should lose the foetus of an older term, in the very same way; the uterus in this woman does not grow larger than a certain size, while the foetus within goes on to increase, beyond perhaps the space of two or three months after. But the foetus still goes on to increase, whilst the uterus ceases to be enlarged in proportion, which is indeed the reason that many women miscarry at a particular time^p.* I have myself seen many such cases, and was more particularly surprised at that of a very healthy lady, who, without any manifest cause, frequently suffered abortion about the end of the fifth month; nor did she ever bring forth a child at the full time, notwithstanding every kind of remedy had been tried by the most knowing physicians.

Whence it is not without reason, that Hippocrates, after he had recounted all the various causes by which the foetus might be destroyed, subjoins the following: *But the uterus itself hath also a peculiar disposition, where-*

VOL. XIII.

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^p Si vero concipiat quidem; sed foetus bimestres eodem exacte tempore corrumpat, neque prius neque posterius; idque ei bis vel ter eodem contingat modo; aut etiam si longioris temporis foetum eodem modo corrumpat; hujus uteri in majorem molem non crescent, foetu in eis augefcente, et bimestre vel trimestris spatium excedente. Sed hic quidem augefeit, uteri vero nihil increfcent, propterea sane multæ eodem tempore foetum corrumpant. *De infœcundis, cap. 18. ibid. p. 857.*

by it occasions abortion, when it is flatulent, too dense, too large or too little, or affected by some such improper qualities^a. We are assured, by a very eminent master in the art of midwifery, that in some women he had found the uterus so hot, as to kill the fœtus with the excessive heat, and to dry up and harden it. This he more particularly observed in a certain woman, whose internal surface of the uterus felt rough, and parched with so great a degree of heat at the same time, that it was uneasy to the hand when put up within it, which could not, by any means, long endure to be kept in that situation. The fœtus was dead, dried up, and hardened; the placenta was small, parched, and cohering very closely, so that it was with difficulty separated from the uterus. He remarks, at the same time, that this very woman had lost several fœtuses on account of this same excessive heat in the uterus^r.

It seems, indeed, to be no improper distribution of the causes that bring on abortion, which we find in Duretus^s distinguished into two classes: “ Every
“ cause of abortion, whether inherent within, or hap-
“ pening from without, may all be reduced to a two-
“ fold inability, the one of properly accommodating the
“ fœtus, the other of affording it due nourishment.”

Besides, if the fœtus, from whatever cause it may happen, should die before it is ripe for delivery, the consequence will readily be a hæmorrhage from the uterus, together with the expulsion of the dead fœtus: for although some rare instances may have happened, where a dead fœtus has remained for several months, nay, for years, within the uterus; yet, for the most part, this useless dead lump is expelled in a very short time after the accident. But even this rudiment of a human creature is no sooner endued with life, than it becomes that moment subject to mortality: nor are there required any very powerful causes to destroy the tender embryo in the mother’s womb; for it is a constant

^a Sed et ipsi uteri naturas habent, quibus abortionem faciunt, quum flatulenti, densi, magni, parvi, existunt, aliisque similibus afficiuntur. *De Mulier. Morb. lib. i. cap. 24. ibid. p. 745.*

^r *Peu pratique des accouch. liv. ii. chap. 17. p. 535.*
Hippocr. p. 442.

^s *In Coac.*

stant observation, that the greatest part of mankind are taken off by death, the nearer they are to their origin. “ For when they are very young and small, they “ are for the most part very weak : nay, even fœtuses “ of a pretty large size are also ready to be lost. Where- “ fore women must not be surprised that they lose “ their fœtuses against their desire ; for at all times “ there is great attention and skill requisite to assist “ them in conceiving, in completing their gestation, “ in nourishing the fœtus, and freeing them of it at “ last by a safe delivery ^t.”

There are, besides, causes of a uterine hæmorrhage, which have a relation to the fœtus ; but these can neither be certainly known, nor, if they were known, could they be either removed or prevented. Those of eminent skill in the art of midwifery ^u have observed, that should the umbilical rope be shorter than usual, or though it should be of a sufficient length, yet if it happen to be twisted round the neck or limbs, there is then great danger, lest, by the motion of the fœtus, the placenta should be separated from the uterus, and that again be followed by a uterine hæmorrhage. We have an instance of such a case ^w ; and it is very well known, that difficult labours very often happen from this same cause, as we shall afterwards see, when, for instance, the child, intangled in its own navel-string, cannot be excluded by the most violent efforts of the mother. The placenta usually adheres to the bottom of the uterus ; sometimes also to the sides ; very seldom to the neck of the uterus ; which last, when it happens, a hæmorrhage from the uterus, towards the end of gestation, is impossible to be avoided ^x. I had occasion to see two instances of the birth of a dead child, in one lady of distinction, where every thing was exactly and rightly formed ; only the navel-string was, towards the middle, twisted into a firm knot, so that all communication between the mother and fœtus had been intercepted. The umbilical rope

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^t Hippocr. de Mulier. Morb. lib. i. cap. 25. Charter. Tom. VII. p. 745.

^u Mauriceau traite des malad. des femmes grosses, Tom. I.

^w Acad. des scienc. 1701. mem. 118. ^x Levret l'art des accouchemens, p. 39.

seems to have formed by chance a bought or link, thro' which the whole body of the fœtus passed, and afterwards, by its motion and weight, had drawn the knot, already formed, into such a degree of tightness, that the umbilical vessels were entirely compressed; for when the knot was loosed out, all that part of the navel-string which was taken into the knot was quite flattened. This lady, however, had borne several children alive, both before, and likewise after these two mischances.

Hence it is very evident, that there may be very surprising and hidden causes assigned for a hæmorrhage of the uterus, which no human prudence can prevent or avoid. It now follows, that we consider those means requisite to secure a woman with child from so great a danger, whilst the blood continues to flow from the uterus.

§. 1307. **T**HE means are, rest of body and quiet of mind, a moderately cool air, bleeding, astringents, and opiates.

Rest of body, &c.] As to this particular, all are unanimously agreed; for since, as we have observed before, in the preceding paragraph, excessive motion of the body, and violent affections of the mind, are so frequently the causes of a uterine hæmorrhage, it is of itself extremely plain, that rest must be highly necessary, lest all the blood should pass out entirely by the open vessels of the uterus, and the consequence should be inevitable death. Hence the patient's clothes ought to be immediately loosened, lest the external vessels be any way compressed, and so a larger quantity of blood, by that means, circulate internally. Afterwards, care is to be taken to lay her in a horizontal posture; for by this she is prevented, as much as can be, from fainting.

Air moderately cool.] Frequently, by reason of the great loss of blood, they turn pale and cold; and then the hæmorrhage is diminished, or sometimes is entirely stopped: but as soon as the surface of the body is covered

vered up in bed-clothes, or cherished with warm clothes, the hæmorrhage immediately begins again to break out. For the sole and principal hope consists in this, that while the smallest life remains, there may be an opportunity given to the orifices of the vessels to contract, or to be stopped up by the coagulated blood; whence it is recommended, that they be laid rather on a hair-mattress well stuffed, than on a soft feather-bed. For the same reason they are to be revived with no cordials, however weak they may be, and afraid of fainting; or, if any should be administered, they ought to be of the gentlest sort, and no way spirituous. The fragrancy of a lemon, the smell of balm, the flowers of linden, roses, elder, and such like, as also of the simple waters distilled from these, will be sufficient. But in what manner the heat of the air is to be tempered, we have already shewn at §. 605, n^o 2. It is very often observed, that wounded soldiers, drained almost of every drop of blood, while they are left in the open air, among the dead bodies, afterwards recover, who would, in all probability, have been hurried to their graves by a more officious care and tenderness. On another occasion we took notice, at §. 161. of a country peasant, who escaped, notwithstanding he had his axillary artery divided, and was laid up for dead. But how much the use of cold water is conducive in checking hæmorrhages, has been already demonstrated at full length, at §. 1200, n^o 2. In Hippocrates we read of the following remedies against the uterine hæmorrhage: *Let a wet sponge be applied, and a piece of smooth, soft, scraped linen, charged with cold water, be put up the belly; sprinkle cold water all over the body; let the bedstead be raised up somewhat towards the feet, and make up the bed in the same manner^y. We have something like the same in Moschio^z: “It is necessary, when they enter upon their cure, to be*

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“laid

^y Spongiam madefactam admoveto; et linteum læve, molle, derafum, aqua frigida imbutum, ventri injicito; frigidaque aqua perfundito; lectumque a pedibus altiore facito, ac ita sternito. *De Mulier. Morb. lib. ii. cap. 4. Charter. Tom. VII. p. 797.*

^z Spach. Gynæc. p. 16. & Harmon. Gynæc. part. post. cap. 220. p. 32.

“ laid in a little bed-chamber, rather dark, and moderately cool; and the bed pretty hard: let their lower extremities be laid higher than the head; and let the body be kept still and quiet, for every kind of motion is apt to provoke the flux; and their feet twisted in, one above another: apply also large sponges dipped in cold water, or vinegar mixed with water, to the parts themselves, that is, to the breast, (share-bone rather, as it is read, *κυστις*, in the Greek text) kidneys, and groins, changing them also frequently, so as not to allow them to grow warm by the heat of the body: all the outer surface should be kept tight, and bound up with bandages, or the face put under cold water; also to foment constantly with fresh cold water, and to cool the whole body by constant fanning.” Nay, he also recommends in the same place a cold bath, of the decoction of astringent plants. But seeing this would require the body to be moved, it is very plain it could hardly be proper to administer it, unless the hæmorrhage was now very much diminished, or almost entirely stopped; whence it seems rather better calculated to strengthen and secure against a relapse, than to be of service in checking a very violent hæmorrhage. This, at least, is evident, that it is a long time since physicians have expected great benefit from moderately cold air, in refrigerating the whole body; whence also it was customary to give cold water, mixed with the juice of lemon, by way of drink, and broths administered moderately cool.

Bleeding.] When the connection of the placenta is once dissolved, and the blood flows from the uterus in a full stream, bleeding can hardly be administered with safety: for lessening the quantity of blood will not hinder what remains from escaping through the open orifices of the uterine vessels; and therefore, by emptying the vessels still more, convulsions and death would sooner follow. But bleeding is of great use in preventing a flooding from a fall; and also when few vessels only are hurt, and the blood flows from the uterus in a small quantity; for thus the hæmorrhage

is sometimes kept from increasing, and an abortion prevented. Helmont^a, inveighing against the physicians, in that they ordered bleeding both in cases where the menses were retained, and where there happened to be too liberal a discharge, says, “ that it would be “ pretty much the same, as if, to cure an unruly “ horse of his mettle, one, by cutting his tendon, “ should make him lame.” For should women with child escape the present danger, there is just reason to be afraid of their falling, through the great loss of blood, into a cachexy or dropsy.

Astringents.] How much is to be expected from astringent remedies, whilst they cannot be immediately applied to the wide open vessels that are pouring an incessant large quantity of blood, hath been already considered, at §. 1200, n^o 2. in treating of the Hemoptoe. But here, too, the blood flows from the uterine vessels, to which no styptics can be immediately applied; and therefore all that has been there said, may also be very properly applied to the uterine hæmorrhage.

I know very well indeed, that pessaries, prepared of astringent remedies, have been recommended by Hippocrates, and also, afterwards, by other physicians. But as these only lie in the vagina, nor ever can be made to reach the orifice of the uterus; hence neither can there be any certain assistance expected from them. Again, when the vagina is blocked up by these pessaries, the blood, not flowing out with freedom, coagulates, not only in the vagina, but sometimes likewise in the orifice of the uterus itself; and thus there may be some stop put to the hæmorrhage: but then, at the same time, as the open vessels are still pouring out, the blood gathers, and, getting in between the chorion and surface of the uterus, separates the chorion more and more from the uterus, and by that means breaks through more vessels. Hence, when the clots of blood, which choak up the orifice of the uterus, come to be expelled, the hæmorrhage of the uterus, which was thought to be diminished, when
very

^a In capitulo, *De conceptis*, n^o 23. p. 487.

very little or nothing could get out whilst the vagina was blocked up by the pessary, returns with more violence than ever: and what is still more, the grumous clots, which stick in the orifice, will irritate the uterus, and may excite labour-pains, which will certainly endanger the life of the foetus, if it should be as yet too young; of which more shall be afterwards said in some following paragraphs, where we shall see the masters of this art go over to different opinions; while some are for promoting, by every method, the immediate expulsion of the foetus, in order to snatch the mother the sooner from so great a danger; and others again are for proceeding with a little more leisure and circumspection. It is, however, certain, that, as we have just now observed from Moschio, if a woman lie quiet with her thighs close, one thrown over the other, she may so compress the external lips of the vulva together, as the blood may have an opportunity of clotting, and so all that be obtained, which, in any shape, can almost be expected from a pessary. If any one, however, has a mind still to try this, it seems advisable to refrain from the use of all acrid styptics; and not to introduce them too far up into the vagina, lest the orifice of the uterus, which is very sensible, should suffer injury or irritation.

Opiates.] From the use of these there may perhaps be more good expected. Formerly, at §. 1200, n^o 2. it was said that the action of styptics was much more successful in brutes than in the human species; and that for this reason, because brutes are incapable of knowing the danger, but mankind are under great pain and disturbance on the occasion: if this disturbance, therefore, by giving an opiate could be taken off, in that case they might be perhaps of equal benefit in the human species. Every physician knows how much women with child are alarmed and disturbed as soon as they perceive a hæmorrhage from the uterus, being in great apprehension and dread both for their own safety and the life of the foetus; and therefore opiates on this account may be of great use and benefit.

But experiments also made upon frogs seem to put it

it beyond doubt, that opium has a power of retarding the circulatory motion of the blood. The celebrated Alston^b made some experiments on frogs, in order to discover what changes were made by opium upon the blood, or upon its motion through the vessels. It is very well known, that, by means of a microscope, the circulation of the blood can be very well perceived through that transparent membrane, or web, which joins the toes of this creature's feet together. After he had conveyed, by means of a small glass tube, a few drops of a solution of opium, made with water, into the stomach of the frog, and afterwards had applied the microscope, none present could discern any alteration in the consistence, or colour, of the red blood and serum; no change appeared with respect to the magnitude, figure, or colour, of the red globules. But the velocity of the blood's motion through the vessels was changed in a very surprising manner, so as to be one half slower than formerly: half an hour scarcely elapsed when the motion of the blood through the vessels began to increase gradually, and the frog regained its former vigour, together with the same quickness of circulation of blood through its vessels as before. The frog was put into fresh water for half an hour, in order to refresh itself. Then, after having another dose of opium poured into its stomach, it was exposed to the microscope: the blood moved much slower through the vessels than in the first experiment, and gradually diminishing in celerity; at length it stopped altogether, first in the smaller vessels, then in the larger; and at last, in about a quarter of an hour, the creature expired. But notwithstanding the velocity was considerably lessened, yet the pulse in frequency was no ways sensibly diminished. Nay, even when the progressive motion of the blood entirely ceased, yet the strokes of the pulse might be perceived by a sort of undulatory motion, by which, during the diastole of the heart, the blood seemed to go as far back as it advanced in the time of the systole, till the frog, at length, appeared to be quite dead. Nothing disor-

dered

^b Medic. Essays and Observ. Vol. V. part i. n^o 12. p. 153.

dered however could be observed in the viscera; the stomach was only filled with a gelatinous mucus, tinged a little with the colour of the opium.

These experiments also were frequently repeated, and always with the same success. One of these frogs, however, put to death in this manner, came to life again, being kept in a vessel, in such a way, as, should it revive, it might be either dry, or in water, as it should find most convenient.

These were also confirmed by a number of experiments made by the celebrated Dr Whytt^c, where he has likewise many other ingenious observations, to prove that opium has a very powerful efficacy on the muscular force of the heart itself.

But seeing it may be of use in violent hæmorrhages to keep up life in its weakest state, as we have frequently before observed, the reason at once appears why opiates in this respect also may be of very great benefit. In the *Materia Medica*, at this number, such a formula is to be seen, in which three grains of opium are dissolved in six ounces of water, and a spoonful is to be given every quarter of an hour, till the disorder begins to lessen: the following words are afterwards added, “Supposing it capable of being subdued by a medicine of this nature.” At the same time the “blood-stone, Armenian bole, dragon’s blood,” are aded to the mixture; which are all recommended for their astringent quality. But as to what is really to be expected from medicines of that sort, we have already given our opinion.

Ligatures also on the limbs are found beneficial; such, however, as only press upon the veins, and serve to retain the blood in these vessels: but the arteries, which for the most part lie deeper, ought not by any means to be compressed. This may very well be obtained by a bandage applied only with a moderate degree of tightness; for the whole intention is only, that part of the blood may be retained in the limbs, so that all may not be suffered to flow out by the uterine vessels; and for the same reason, the arteries ought to remain

^c *Essays and Observat. Physic. and Liter. Tom. II. p. 280. & seq.*

remain free. Concerning this matter we have already discoursed at §. 743, in treating of the methods of checking a violent hæmorrhage at the nose. Besides, it may be necessary to observe, that should the arteries of the lower extremities be compressed, the force and quantity of blood, driven through the vessels of the uterus, may then be increased, and so also the hæmorrhage of course: for it was remarked at §. 1291, that sometimes a suppressed menstrual flux of blood has been restored by a compression made on the great femoral artery, and relaxing the uterus at the same time by the application of warm baths.

But when the hæmorrhage from the uterus begins to lessen, whether by the collapsing of the vessels, or by the thrombi or clots of extravasated blood stopping up their open orifices, all the ligatures are not to be loosened at once, and at the same time, but one after another: for there is reason to be afraid lest the collected blood should return too suddenly to the heart and oppress it, there being frequently a very great degree of weakness; or even lest it should be irritated into a more frequent and violent contraction, whence there may be very just reason to apprehend an increase of the hæmorrhage. The exhausted vessels, in the mean time, may be recruited by small quantities of veal-broth, given frequently and moderately cool. Lower^d mentions a case, as having heard it from a physician of the greatest credit, where, in a youth of sixteen years of age, the blood sprung out for two days together continually, nor could be stemmed by any means whatsoever; whence they attempted to restore his strength by means of nourishing broths, which he took down with the greatest relish; “ till at last things
“ came to that pass, that the whole mass of blood ha-
“ ving almost run off, what then came away looked to
“ be pale and diluted, no way resembling either the
“ nature or appearance of blood, but liker to the broth
“ which he had drank than to the other fluid; and
“ this watery efflux for a day or two continued to
“ have the same appearance, while the heart persisted
in

^d De corde, cap. 2. p. 70.

“ in its motion as usual, till such time as, the flux
 “ being at length moderated and soothed, the young
 “ man was restored again to perfect health, and from
 “ that time began to grow till he came to be a strong,
 “ robust, square-set man.” Seeing therefore that
 broth of this sort, in a body so weakened by such a
 hæmorrhage, could flow through the vessels almost un-
 changed, and sustain life, though exceeding weak, it
 is plain, that, in a violent hæmorrhage of the uterus,
 though life is indeed in the greatest danger, and all
 hopes turn upon a very narrow point, yet we are not
 wholly to despair, provided stimulating cordials, and
 things of that sort, be kept away, which the good
 friends and by-standers are, on account of the great
 debility of the patient, but too ready to recommend:
 for the only spark of hope consists in life supported in
 a weakly state. By this method I have preserved se-
 veral women with child, who, to all appearance, could
 not have been preserved by any other means whatsoever.

§. 1308. **I**F by these means no advantage be
 gained, the infant is to be forthwith
 extracted, in the most skilful manner, and the
 uterus freed from the foetus, placenta, and gru-
 mous blood, as soon as possible.

Seeing that, in the natural delivery, the placenta
 is no sooner disjoined from the uterus, than there fol-
 lows a pretty plentiful hæmorrhage, which, however,
 is soon stopped by the contraction of the uterus, now
 empty and at freedom; hence it is no wonder that all
 are so desirous in very dangerous hæmorrhages of the
 uterus, to have the cavity freed as soon as possible of
 its contents: for when abortion is the consequence, as
 it frequently is in the first months of gestation, the
 hæmorrhage usually lessens in a very short time, and at
 length entirely ceases, and all by the contraction of
 the uterus. Hippocrates observes^c, That, in a fe-
 male

^c In fluore muliebri, si convulsio, aut animi defectio, superveniat, autum. *Aphor. 56. sect. 5. Charter. Tom. IX. p. 229.*

male flux or flooding, if convulsions or faintings should supervene, it is a very bad sign. And elsewhere he has the like presages, and in particular is afraid of terrible convulsions: *The great toes are contracted, and the thighs and legs are always drawn towards each other; vast pains arise about the loins, and the hands are deprived of all power of moving. While all these symptoms prevail in this manner, convulsive cramps also, usually beginning at the clavicles, fly up to the throat, cheeks, and tongue; and from them in a little after they get down by the back, along the tendons near the back-bone, to the loins; and thus the patients are carried off by the mere violence of these symptoms^f.* Since then such horrid consequences are to be apprehended from a hæmorrhage of the uterus, even the most skilful masters in the obstetric art have therefore advised, in such dangerous circumstances, that the uterus be forthwith evacuated; nay, have placed the only hopes of safety in this alone. Mauriceau^g has said, that when the hæmorrhage from the uterus is very violent, there is then need of the utmost dispatch, and orders the operator to lay hold of the child's feet with his hand, and bring it away in that manner; and relates, at the same time, the melancholy case of his own sister, who was carried off in the last month of her pregnancy, owing to their being too late in bringing the child away, after that she had almost lost every drop of blood in her body. Several other cases he mentions of women with child, who, together with their foetus, had been preserved by a timely delivery. Van Deventer^h is of the same opinion, and orders the child to be immediately brought away, whenever a dangerous hæmorrhage from the uterus shall happen on account of the separation of the placenta, and indeed "at whatever time, whether

VOL. XIII.

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" before

^f Magni pedum digiti contrahuntur, et ad furas femora semper contendit, lumborum ingentes dolores, et manuum ad motum impotentia. His ita contingentibus, tum a claviculis ad jugula, ad malas, et linguam, tetani fieri consueverunt. Et ex his paulo post in posteriora a tendinibus juxta spinam ad lumbos; sicque per violentiam pereunt. *De Mulier. Morb. lib. ii. cap. 1. Charter. Tom. VII. p. 794, 795.*

^g Des malad. des femmes grosses, liv. i. chap. 21. Tom. I. p. 161, &c.
^h Nov. lum. obstetric. cap. 53. p. 145.

“ before or after the seventh month.” In the mean time, however, it is very certain, that this is not to be done without dilating the orifice of the uterus, which sometimes cannot be accomplished without employing considerable force and violence: but, in the following chapter, it will more plainly appear, that a violent dilatation of the orifice of the uterus cannot be performed without great hazard; for very often a most dangerous inflammation of the uterus is the consequence. Mauriceauⁱ acknowledges, that if the orifice of the uterus shall be soft, slender, and smooth, in that case they easily escape; and on the other hand, if it should be thick, hard, and unequal, they are carried off. The reason is very evident; to wit, the great degree of violence which must be offered to the orifice of the uterus, before it can admit the hands of the surgeon, in order to bring away the foetus.

This, indeed, was the reason why some have been of opinion, that the foetus ought, by no means, to be brought away, unless where it can be done without a violent dilatation of the orifice of the uterus^k; and that then only it can be of real benefit, when the orifice of the uterus is so far open as easily to admit the operator's fingers. In the same place also an unhappy case is related, where, after the foetus was brought away, the hæmorrhage did not diminish, but on the contrary increased, till the poor miserable woman, after having spent all her blood, at last expired. In an another place afterwards he still inculcates the same admonition, and presages certain death as the consequence, if there is a necessity of using any violence to the orifice of the uterus in order to bring away the foetus. Nay, even Levret, of no inconsiderable reputation in the obstetric art, was of opinion, that a woman with child, if, in case of a hæmorrhage from the uterus, the labour-pains were not as yet begun, nor the end of the usual term of reckoning near, was not even to be examined by the touch. But where, in the very time of labour already begun, a profuse hæmorrhage

ⁱ Livr. i. chap. 27. p. 170.
chap. 1. p. 272, et seq.

^k *Peu pratique des accouchem.* liv. ii.

hæmorrhage from the uterus shewed itself, then indeed he advises to break through the membranes which contain the waters: for when the waters are once evacuated, the uterus will then have room to contract itself, and so the hæmorrhage will be diminished.

The ingenious Puzos¹, justly celebrated for his skill in this art, very prudently indeed followed a middle course: for as he perceived that the bringing away the fœtus, where it must necessarily be performed with a violent dilatation of the os uteri, was always attended with so much danger, even though it was frequently accomplished in a very short time, and that all believed it ought to be quickly dispatched, in order to give the uterus room to contract; as he observed, at the same time, that a uterine hæmorrhage, happening at the usual time of delivery, was greatly diminished upon the increase of the labour-pains; he therefore concluded that these pains were to be increased, or excited if they were not as yet come on. He acknowledges, that the exclusion of the fœtus is not only conducive, but even altogether necessary, to put a stop to the hæmorrhage; but is, at the same time, of opinion, that this is to be attempted in a way which shall have the nearest resemblance to that of the natural delivery.

In the natural delivery, when the fœtus with its head enters into the orifice of the uterus, by how much the head advances, by so much is the uterus contracted, and the child's head filling up the dilated orifice of the uterus hinders the free efflux of the blood: at the same time the uterus, contracting itself pretty strongly, presses its whole internal surface to what is contained within its cavity; whence the open mouths of the vessels are compressed: but when the membranes are broke, and the waters run out, the uterus, contracting itself still more, by that means lessens the diameter of its vessels; and thus by its own native force, assisted by the efforts of the woman in labour, all the internal hollow surface is pressed strongly to the body

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of

¹ Academ. de chirurg. Tom. I. p. 358, et seq.

of the foetus; whence also the hæmorrhage will be in like manner diminished.

But the natural delivery generally proceeds in a slow manner, and a woman with child may very possibly be carried off by the violent profuse hæmorrhage, before the child's head has dilated the orifice of the uterus, so as to be able, by the efforts of the woman in labour, to enter it, or break the waters. This has been the cause why many have advised to forward the speedy exclusion of the foetus.

However, it is plain from observation and practice, that the natural delivery may be accelerated by gently and gradually opening the orifice of the uterus with the fingers, in the same manner almost as it is, in the natural delivery, dilated by the strong efforts of the woman in labour. In a hæmorrhage of the uterus, the os uteri opens more or less: it is moistened by the warm blood which comes away: sometimes it is still rendered wider by the large clots of coagulated blood being pressed out; from whence also, for the most part, slight pains arise, but too feeble on account of the weakness occasioned by the hæmorrhage: efforts must therefore be made to quicken them; which is done by introducing one or more fingers into the orifice of the uterus; by which means it is gently, and by degrees, to be dilated; not all at once, but at short intervals; in consequence of this the pains are increased; the membranes, in which the waters are contained, swell out, which are to be immediately broken, that the uterus may now have greater liberty to contract, when freed from part of its contents; the hæmorrhage is diminished; and, in a short time, a delivery follows, which, for the most part, is attended with safety to both mother and child; whereas both might have perished, or been in the greatest danger, from the slowness of a delivery simply natural, if the foetus had not, by means of a quicker dilatation of the os uteri, been brought away by the hands of a surgeon.

In this manner is the orifice of the uterus to be dilated, but gently, and at proper intervals; the labour-pains

pains raised, or increased if they are already come on; and time and opportunity given to the uterus gradually to contract itself. But should the os uteri happen, in order to bring away the foetus, to be more suddenly or forcibly dilated, there is then good reason to be apprehensive of an inflammation ensuing; nor is it hardly to be expected, in this case, that the uterus, after the foetus is brought away, shall have still the due degree of power left, which is necessary to its quick contraction, whilst every thing continues in a flaccid state, on account of the strength being so much impaired by the preceding hæmorrhage: and this seems to be the reason why so many, after the foetus is brought away, are carried off by the continuation of the hæmorrhage; or, should they even get over this particular danger, yet, by reason of the violence done to the uterus, an inflammation succeeds, and they are seized with an exceedingly acute fever, accompanied with the most dreadful symptoms, from which very few indeed recover.

The ingenious and celebrated Puzos has, from many curious observations, proved the utility of this method, which he justly prefers to the forcible delivery of the foetus; which, however, is sometimes necessary, where the child's head does not correspond to the orifice of the uterus, but the situation perhaps is preternatural: but he remarks, at the same time, that a gradual attempt to dilate the os uteri must be made, in order that, if necessity should require it, the child may, with less inconvenience and trouble, be brought away by the feet.

Here he also very well observes, that hæmorrhages of the uterus, if they shall happen after the sixth or seventh month, almost always return, even though the very best method of cure, and the most necessary cautions, have been observed: for he was of opinion, that, in cases where the placenta was only in part separated from the uterus, should the hæmorrhage happen to cease, it was not owing to any new re-union made between the placenta and the uterus, but because the large clots of coagulated blood stopped up the wide open

mouths of the vessels; which clots might drop off from the slightest cause, whence a relapse of the hæmorrhage might be very well apprehended. Yet the ingenious investigator of the gravid uterus^m imagines, that he had found one instance in his own wife, where the placenta had in part separated from the uterus, and was afterwards firmly re-united to the same again; for as she was going down some steps, one day, in perfect health, in the fourth month of her pregnancy, her foot happening to stumble, she was put in a terrible fright, but did not fall; nor had she ever before experienced the smallest harm from much greater causes of alarm and fear. A few days after, happening to rise in the night-time to make water; and immediately after, lying down, and composing herself to sleep; in the morning she found her urine deeply tinged with a mixture of blood, and the bed stained with a large yellow-coloured spot about a foot in length, something glutinous, and all round the edge begirt with a narrow border of a bloody colour. At first a miscarriage was greatly apprehended: but, however, by rest, and proper remedies, it was so managed, that she passed the rest of her term in very good health; and on the very day which she had calculated as the last of her reckoning, she brought forth a fine, large, healthy girl, and, to all appearance, more robust than any of her other children she had born before. But the placenta, to whose separation, in a greater or lesser degree, that profusion of thin blood from the uterus might, with great probability, be imputed, adhered now so firmly, that it could not be brought away without several reiterated attempts by the hand of the midwife: it came away, however, much lacerated in one side: afterwards, upon an accurate examination, there appeared a thin subpellucid membrane, altogether homogeneous, which covered the placenta, excepting only in the places that had been hurt, at whose edges it terminated by a very distinguishable mark of separation.

From all which it appears very probable, that the placenta,

placenta, in part separated from the uterus, may be again firmly reunited to it; and that, even in these cases, we have less reason to be afraid of a return of the hæmorrhage.

§. 1309. **N**OR is it of any importance at what time of gestation this shall happen, since it is more eligible that the fœtus should perish, which even otherwise has no chance for its life, in order to save the mother, than that both should be infallibly lost.

This was formerly the opinion of Mauriceau^a, who insisted upon having the fœtus brought away as quickly as possible in all hæmorrhages of the uterus, even although the patient should not have been gone above three months with child; nay, though it should not even perhaps be yet so much. But, however, at this particular period of pregnancy, the lips of the os uteri meet closer together, and the situation of the parts lies higher up, so that it is not so very easy to touch them with one's finger, and much less so to open them in such a manner as to be able to bring away the fœtus; which also, on account of the smallness of its size, is difficult to lay hold on; nor is it possible, the body being so soft and slippery, to keep it fast within the fingers. Mauriceau^o however acknowledges, that, if the orifice of the uterus should be sufficiently open, it is much better to commit the whole affair to nature; but at this time of pregnancy it very seldom happens that the orifice of the uterus is sufficiently wide to allow two fingers to be introduced without considerable violence. Another difficulty is, that no one can have a certain knowledge with regard to the bigness of the fœtus about the third month, there being an immense diversity observed in abortions with respect to their magnitude, even though the patients should be gone only three months in their reckoning, and though abortions do more readily happen about this particular time: nor will

^a Liv. i. chap. 21. p. 171.

^o Ibid. p. 72.

will this appear at all surprising, when we consider, that the little young embryo, which just begins to partake of life, must, that moment, be most of all liable to accidents of mortality. But the embryo, though it should happen to be dead, is not expelled out of the mother's body immediately; whence a hæmorrhage of the uterus may arise in the third month, or sooner, notwithstanding the embryo, so small and soft, and after death vanishing into nothing almost, may be contained within the uterus, and elude all the dexterity of the midwife's fingers in attempting to bring it away. Mauriceau^a candidly acknowledges, that he had observed in women, who reckoned themselves three months gone with child, the abortion to be sometimes no bigger than a bee, and sometimes to equal the size of the largest finger; and the truth of this is daily confirmed by a number of observations. It is true, indeed, there may have been a mistake perhaps as to the exact time of the first conception; but that this mistake in the reckoning should have been so very general, even in women frequently accustomed to be pregnant, can hardly be thought very probable.

Hence in hæmorrhages of the uterus, which happen during the first months of gestation, it does not seem at all adviseable, for the reasons already mentioned, to attempt to bring away the fœtus; for it is allowed by all, that women rarely die of abortion at this period of pregnancy. Many I have seen preserved by those remedies and management, which have been particularly recommended at §. 1307. notwithstanding they have been convulsed from the profusion of the hæmorrhage, and thought by all present just ready to expire.

That a hæmorrhage of the uterus during the latter months of gestation, is by far more dangerous, every body must allow, seeing the uterine vessels must be still more and more dilated; and yet even in this case we are by no means entirely to despair of saving both mother and child. A healthy woman, five months gone with child, happened to fall down from the steps of

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a ladder upon a hard stone pavement: there followed immediately a vast hæmorrhage from the uterus; so great indeed, that tho' I ran with all haste thither, and lived just in the neighbourhood, I found the whole pavement in so short a time covered with an inundation of blood. Being immediately put into a bed, she fainted away. A skilful surgeon and man-midwife was called, but durst not attempt any thing, as he believed her just on the point of expiring. I then, with great diligence and attention, set about putting in practice the method of assistance recommended at §. 1307. and as the attendants about her were careful in observing every thing I advised, to the greatest exactness, she not only had the fortune to escape so great a danger, but also brought forth a healthy child at the full time.

A hæmorrhage of the same sort happened in another woman, who, being six months gone with child, in attempting to get into bed, her legs sliding out from each other, was forcibly driven upon the edge of something extremely hard: her I cured by the very same method, and with like success.

Neither is it also quite certain, at what age a foetus must necessarily have no chance of living, as appears from the example of Fortunius Licetus^q, whose mother, while she was with child of him, from the jolts and shocks she received in a disagreeable journey, besides the fright she had been put into by a violent storm, miscarried, when she believed herself to be in the seventh month of her pregnancy: when he came into the world, he was no bigger than the palm of one's hand. The father, who was a physician, did not however despair of preserving his son, but with great care cherished his little tender body with the gentle warmth of a furnace, heated to a due degree by the same kind of artificial management almost as the Egyptians used to observe in hatching chickens from eggs without the assistance of the hen: he was very careful in giving instructions to the nurse in what manner to feed the tender creature, and had the good
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^q. Baillet jugem. des sçavants, Tom. V. parte i. p. 239.

fortune to reap the fruits of his diligent sollicitude and care, in that the child not only grew up to manhood, but became famous for many works of erudition, and had almost reached to the age of fourscore when he died.

From all which we may be allowed to conclude, that our hopes are not to be wholly laid aside, even in the most dangerous cases; neither are we always, for the sake of the mother's safety, to have recourse to the delivery of the foetus; but that the method pointed out by the celebrated Puzos is to be preferred, which is far less dangerous, and recommended to our choice by many happy instances of its success.

END of *the* THIRTEENTH VOLUME.

